Foundation FORUM

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MODERATORS:

Monroe W. Hatch, Jr.
Executive Director
AFA/AEF

Brian Green
Chief, Legislative Research, AFA

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The Air Force Association (AFA) is an independent veterans' organization whose objective is to promote greater understanding of aerospace and national defense issues. Among the ways AFA disseminates information are publication of AIR FORCE Magazine, sponsorship of a series of national symposia, and through educational outreach programs of its affiliate, the Aerospace Education Foundation. AFA is a grass-roots organization. Total membership is nearly 200,000 of whom more than 38,000 are Life Members. There are 328 AFA chapters in the United States and 23 overseas. The Association has 226 Industrial Associates, and its chapters have established ties locally with more then 2,400 businesses in the Community Partner program. The Air Force Association was incorporated in the District of Columbia on February 6, 1946.

The Aerospace Education Foundation

On May 1, 1956, the Air Force Association established the Aerospace Education Foundation (AEF). The Foundation was established as a nonprofit organization in order to formulate and administer AFA's educational outreach programs. AEF is supported through tax-deductible contributions. Over the past thirty-six years, the Foundation has made progress in educating AFA's members and the public about the critical role aerospace development plays in the modern world. By doing so, the Foundation promotes a greater understanding of technological advancements and aerospace education. AEF's scholarship programs also encourage higher education in the technological career fields. The Foundation sponsors symposia, roundtables, workshops, contests, and many other programs in order to highlight the full range of educational interest of AFA and to help meet the growing need for scientific and technological expertise.

GENERAL JOHN M. LOH

"Roles, Functions, & Needs"

Last year, I addressed this jam-packed symposium as the commander of Tactical Air Command. This year, I address this same symposium as the commander of Air Combat Command. The difference is significantly more profound than the name change.

Air Combat Command is very busy. We are putting into practice the tenets of the global power part of the powerful Global Reach-Global Power theory which today serves as our Air Force's strategic planning framework.

Believe me, while exhilarating and exciting, putting Global Power into practice is a lot different than putting it on paper and manipulating it in theory.

This symposium has always been a worthwhile forum for exchanging ideas about airpower. Ideas about airpower are vitally important today, because airpower has come of age, everybody in uniform wants some of it, and it is being called upon today to help solve innumerable problems and crises, in some of which it can fulfill expectations, others of which it may fall short of expectations. I hope to shed some light on this point today.

Because this symposium is well attended by the "airpower community," I want to discuss with you four related subjects:

- The emerging role of Air Combat Command, not just in the Air Force, but, even more importantly, in the unified, joint command structure — and how our day-to-day training is being affected by this emerging role;
- The equipment needs and preferred solutions to allow ACC to perform its new roles and functions, particularly in light of what I perceive to be the emerging Aspin approach to defense acquisition;
- Thirdly, to explore the question of the right size for the force for Air Combat Command — the force structure equation;
- And fourth, how I intend to put it all together, to position Air Combat Command as a major force and player in our joint and integrated application of power in the nation's military and defense structure.

Today ACC is as busy as either SAC or TAC ever were. Since the Gulf War, our combat airplanes and people have been in every theater and participated in every force package America has deployed. We are providing the bulk of the airpower that enforces the no fly zone in southern Iraq and contributing significantly in northern Iraq.

Although we are not the principle players in the Somalia mission, we do have airlift, communications and reconnaissance forces and support forces playing a role there. And we are doing some contingency planning for the region around the former Yugoslavia.

We are busy with the counter drug mission in Central and South America, and in the southwest United States. ACC ground radars, AWACS, U-2s, Rivet Joints, airlift and fighters are deployed throughout the region.

These forces support the counternarcotics operations of three joint commands, Atlantic Command, Southern Command and North American Aerospace Defense Command.

I suspect that few people here or in Washington are fully aware of the extent of our commitment to the counter drug mission today. It is massive. All of these ACC deployments are in addition to the

day-to-day exercises, joint training, and work to maintain the combat readiness for our forces.

I will have more to say about the impact of all these rather unforeseen, and unplanned for, deployments on our need for a robust active duty force structure later. What they reveal for me as commander of ACC is that a new paradigm is emerging, characterized by multiple simultaneous regional operations in peacetime.

This new paradigm demands we prepare airpower packages for two large regional fights, while continuing to hone our skills day-by-day so that when called upon, we can win quickly, decisively, with overwhelming advantage, and few casualties. That is — our role is to prepare a very uneven playing field by using airpower as the fulcrum of combat power.

Now, the roles and functions of airpower which the joint force commander expects ACC to bring to the joint campaign are, in general, an overwhelming measure of both offensive and defensive combat air power.

ACC plays the major role in most of the functions of the combat missions involving airpower. Moreover, we provide the air command and control leadership in the form of the joint forces air component commanders in cases where land-based air provides the preponderance of forces.

ACC's functions include providing forces for the attack of strategic targets with both nuclear and conventional weapons, from home or from the theater of operations. Our bomber upgrade plans and roadmap are central to performing this function effectively.

We are proud of our primary role in providing for absolute control of the air, air supremacy, in both offensive and defensive counter air missions. This role allows all other land, air, and sea operations to proceed unimpeded.

We are proud of our role in providing air interdiction, against targets which range deep behind the battlefield, to those which are close to it.

We are proud of our role in contributing close air support to our land forces. Our commitment to this function has increased significantly recently with the formation of our composite wing at Pope Air Force Base supporting the 82nd Airborne Division. And we are now adding A-10s at McChord AFB in Washington to support I Corps and the 9th Light Infantry Division.

We are proud of our role in contributing to theater air defense by attacking aircraft and tactical ballistic missiles before launch, at launch, and during flight, and attacking the command and control system which supports an adversary's air offensive.

And we are proud of our role of contributing combat rescue forces around the world. This function is often neglected in peacetime, but it is vital, literally, in wartime. Today, ACC's combat rescue forces are providing this function already in the region around Iraq.

This does not exhaust the list of functions ACC provides. There are many others, such as strategic and theater level reconnaissance in concert with our Space Command, and continental air defense with our surveillance radars and interceptor squadrons. And of course there are others.

Now, why have I taken the time to enumerate for you, a smart and sophisticated audience, these rather self-evident functions of ACC?

Well, because the subject of roles, missions, and functions is popular these days. I just want to remind you that the roles and functions I have just enumerated are those very roles SAC and TAC excelled at, and ACC has now taken to higher levels of competence:

- We are expert at them — and getting better;
- We are the combat airpower command;
- When a joint force commander wants to perform these functions, he calls on us, and . . .
- While other services may also perform some of these functions to support their services' roles, and that is perfectly proper, we perform them because they are our mission. They define the contribution of airpower to joint campaigns. They represent the totality of what we in ACC do.

Now, to produce the best trained and equipped airmen to perform these functions,

we must design and conduct our training programs to be relevant to the theater and threat we intend to face. Up till now, we have generally trained our squadrons to deploy to just about any theater with a common training program, and with very little joint service flavor.

Today, that is changing, and the change is major. Thanks to the foresight of Admiral Paul David Miller, we are now embarked on a set of training exercises which bring together forces from the Army, Navy, Marines and Air Force. They are designed to be more responsive to each individual geographic theater and adapted to that theater's need for stateside based forces.

We call it adaptive joint force training. Admiral Miller will have a lot more to say about it, including the mechanics of its implementation, so I will not get into that.

Let me just say this method of training recognizes the fact that most of our combat power, in fact ninety percent of it, will be based in the States yet must be immediately responsive to all of the theater commanders' needs. This "just-in-time" training approach is the wave of the future.

I am proud to state that we in ACC are making all of our heretofore large-scale training exercises and ranges, such as Red Flag, Green Flag, Blue Flag, available for putting together and training adaptive joint force packages. In fact, we have the first such package in operation today just northeast of here in South Carolina and the adjoining coastal areas of the Atlantic in FLEETEX 93-1.

But, to conduct all of our roles and functions well into the future and provide that uneven playing field I mentioned earlier will take more than our extremely professional and competent people. It will take a smart approach to equipping ACC's forces over a long period of ever-declining budgets for combat systems.

Let me discuss an approach to make the most out of our investment dollar.

Last year, when he was chairman of the House Armed Services Committee, Les Aspin published several papers describing his approach to defense acquisition. He set forth four "prescriptions" for reforming defense acquisition for the future in an era characterized by a greatly reduced force structure and a reduced acquisition budget.

Assuming that we may see some or all of these "prescriptions" in the not-too-distant future, let me give you my views on how we in ACC might match up and even influence the Aspin prescriptions to meet the operational needs for systems in ACC's future.

The four essential parts to the prescriptions are: first, selective upgrades to existing systems; second, low-rate production of new systems; third, the concept of rollover plus; and fourth, silver bullet procurements.

Selective upgrades to existing systems is certainly not a new idea. In fact, it is one of the pillars of our current ACC modernization program.

We have upgrades going on in virtually every one of our systems today — the E-3 AWACS, RC-135 Rivet Joint, U-2, F-16, B-52H, F-15C radar, F-117, F-111, EF-111, and others. However, we need to focus on upgrades which meet our needs in this new paradigm.

We need to reduce the cost of ownership and increase or alter performance to help existing systems cope with the new threat landscape and regional environments. This is a different approach from the past where upgrades were almost exclusively based on Central Europe and the Warsaw Pact.

Therefore, I welcome selective upgrades as a major acquisition strategy and offer the B-1 conventional upgrade program, now underway, as a defining candidate. Other key upgrades besides the B-1 are the F-15C radar system upgrade, the AWACS upgrade for increased sensitivity, F-117 GPS and FLIR upgrade, the EF-111 receiver exciter upgrade, and the re-engining of the U-2.

But, the granddaddy is the B-1 because of its potential for dynamic impact on the outcome of any conventional scenario.

As a smart acquisition strategy, I would always like to see the existing, upgraded system compete with any entirely new system. This will insure we are getting

value from the new system and serve as a mechanism for instilling more discipline in the acquisition process.

The second prescription is low-rate production of selected systems. Let me make several points here.

First, we should always plan and fund for low-rate in the future, not high-rate. Why? We never achieve the rates we plan for. That will be even more true in the future.

We need to keep a viable competitive domestic industrial base. Let me repeat that. We must keep a viable competitive domestic industrial base.

Therefore, industrial base considerations should be almost equally important as operational need — particularly the timing of such needs. That leads to developing a smart, realistic production rate strategy which, in my view, inevitably leads to low-rate production of all future systems.

How should we do it? Build the organization from the bottom-up for low-rate procurements, not try to fit them into what's left over from a large, high overhead, big rate infrastructure. But that's not easy.

That's why "lean production" is not easy. Lean production is more than production. It's overhead, organization and the production line — in essence, the entire enterprise which must change physically and culturally. Can we do it? Yes, but not the way some are going about it today.

When I was commander of ASD, I instigated the concept of "integrated product development" there. IPD is the cornerstone of the lean enterprise. I am happy to see one of our systems taking off with it. That is the F-22 under ASC's and Lockheed's leadership. It can become the model for the industry.

While I'm on the subject of efficiency in defense acquisition, I think it is important to note none of these concepts like lean production will reduce costs unless we are able to get out from under the burden of excessive oversight. We over-regulate, over-manage, and over-audit our programs to death.

This gridlock is killing the initiative and innovation that are the life's blood of this industry. We need regulatory relief and audit relief, but most important, we need to do away with the adversarial relationship that has developed over the years. We need to approach this new situation as partners. Otherwise all the great ideas from industry, from Secretary Aspin, from all the reformers will be doomed to failure.

Last week I saw some data that drove this point home. It compared the number of people it took to develop and deliver a product to meet government specifications to the number of people needed to prepare a comparable product for commercial sales.

The ratio was three to one. Guess which way? Yes, it takes three times the number of people to produce a product for the government as it does for the private sector, and the quality of the government product is no better, perhaps worse.

I know you've heard this before because I've said it before, as have hundreds of people in both government and industry. But it bears repeating, because all of these ideas like lean production will remain nothing more than talk if we don't address this issue.

Which brings me to another point. It has been 23 months, nearly two years, since the gulf war ended. Can any one here name one system that we fielded as a result of the valuable lessons we learned there? Think about it. Let me know this evening if you think of one. I haven't.

What ACC systems are candidates for low-rate procurements over an extended period of time? Well, I mentioned the F-22 as a new system which can follow that path.

Let me also mention the F-15E. ACC needs more of them, and continued low-rate procurement of this system can lead the way in learning how to achieve both efficient lean production and bring selective upgrades into the process — two prescriptions in one program.

Other good candidates are — JSTARS, LANTIRN, AMRAAM, HARM, and our modular control equipment for our ground radar systems. But, there are many others.

I'm sure no concept has gotten as much attention from an audience such as this as

the idea of "rollover plus." Unfortunately, many have interpreted it as putting technology on the shelf, but I disagree. The way I see "rollover-plus" can be a big plus for ACC.

First, let's define what it is not in my view. It is not putting technology on the shelf. It is not an experimental, or proof of concept, prototype full of wild, unproven new technologies.

Nor is it a Dem/Val prototype like the YF-22, which demonstrates essential performance and high-risk technologies, but little else.

I see a "roll-over plus" prototype as an advanced operational — underline operational — prototype which includes the latest state-of-the-art systems. It also includes the development of manufacturing technologies, with all the producibility elements incorporated. This gives us a fully, or almost fully developed, operational system.

It is the initial product of the lean enterprise, with lean overhead, and integrated product development, IPD, as its fundamental organizing principle.

One doesn't get to a rollover plus prototype cheaply. We could start with an advanced F-15 candidate, an advanced F-16 candidate, perhaps an advanced F-117 candidate, and others. This would allow us to continue to exercise full integrated product development teams in several companies, both primes and major subs, and include manufacturing and support expertise — the areas where industry has done a notoriously poor job — in the process.

In addition, I would like to see the rolled-over prototype competed with the entirely new system, again, as a means to instill cost-control and discipline throughout the acquisition system.

Finally, we would continue to do silver bullet procurements. I define silver bullets as those systems that exploit leap-frog technologies to give us a huge technological lead for the future. While they are absolutely vital in capability, they are needed in relatively few quantities.

We in the Air Force, and particularly ACC's predecessors, have clearly been in the lead in introducing past silver bullet systems — notably the SR-71, the F-117, and now the B-2.

We continue to support the science and technology base which will allow us to field silver bullets in the future.

We need to keep that in mind as we mull over how we in ACC could match up with these four prescriptions, and as a part of putting an operational requirements pull around them.

I believe we should look at an acquisition strategy based not only on the threat, or on contrived initial operational capability dates, IOCs, but on replacement of existing force structure. We need to combat technical obsolescence, improve the cost of ownership, and maintain a globally competitive industrial base.

This replacement-based strategy, rather than a purely threat-based strategy, built around the Base Force structure and the Aspin prescriptions, could give military and industry planners the framework to make smart decisions for investment, and avoid the peak-or-valley, sink-or-swim, all-or-nothing aircraft programs we have had in the past. It's worth looking at.

The class of equipment that replacement-based strategy brings to mind is the bomber. We ought to be able to buy bombers in accordance with a replacement-based strategy rather than strictly a threat-based strategy.

Now, I mentioned the Base Force structure, so let me express some views about its size particularly.

In ACC, we consider the Base Force to consist of 26.5 fighter wing equivalents, and 184 operational bombers. In addition there are 2.5 wing equivalents of air defense fighters, all in the Air National Guard.

Of the 26.5 general purpose fighter wings, 11.25 are in the Guard and Reserves, 7 are overseas, leaving 8.25 wing equivalents in ACC.

That means in the States, we have 63 percent of ACC's fighter force in the Guard and Reserve, and only 37 percent in the active force. Few people know that, fewer still understand its impact.

Those 8.25 wings of fighters, or 25 ac-

tive-duty squadrons, are bearing the brunt of all the deployment activity going on today. It is quite a burden, when you consider that this is peacetime. In fact, I have several wings in ACC sending aircrews back to the Gulf region for the third time, and some wings whose aircrews are now deployed more than 150 days a year TDY.

If any of these current, semi-crises erupted into another Desert Storm against a determined foe, we would be hard-pressed to repeat our performance of two years ago, and would have to mobilize the Reserves nationally at once.

Just as no one predicted Desert Storm, no one has predicted the number of crises around the world requiring the presence of active duty ACC squadrons like we have today, and which seem to be increasing.

Therefore, in my view, until we get a clearer understanding of how this new world order works, and what is required in the way of combat airpower to protect U.S. national interests, it would be imprudent to dip below the Base Force levels laid out in the current defense budget.

As I said, our ACC units see ourselves coming and going. They have a tough job to do. They are meeting all of these pop-up commitments with excellence, but it is taking its toll.

Because of the duration of these commitments, they must all be handled by active duty squadrons, not Guard and Reserve. Our ACC forces already feel the strain of multiple, continuous deployments to many locations.

Clearly, if we must reduce our air forces further, we may have to look to the Guard, Reserves, and overseas force structure.

One more point about force structure this audience can appreciate. Remember our force structure is your market. If it continues to decline, your product base declines accordingly. I clearly see the issue of maintaining force structure as a modernization and industrial base issue. You can help.

Despite all the challenges we see ahead as we gather here in Central Florida this afternoon, I assure you the glass is half full not half empty. ACC will come out of this period of downsizing, restructuring, and realignment of roles and functions intact and strong.

ACC is not having an identity crisis. Just the opposite, our identity is built on the great airpower traditions of SAC and TAC, and we are proud of that. But we are also breaking new ground as we write our own chapter of airpower dominance in military affairs.

We know what we bring to the joint arena — a comprehensive Air Force with the full spectrum of airpower that allows our warfighting commanders to win quickly, decisively, with overwhelming advantage and few casualties. Our mission is not to maintain a status quo. It is to grow and grow stronger as we adapt to take advantage of better tactics and better technologies.

The functions ACC performs are critical to the new unified command structure. ACC is one of the mainstays of the force that LANTCOM will wield in the future in its larger, expanded role. It is inevitable that we continue to change, but our role is indivisible from the whole. We will not just survive, we will thrive.

ACC is working diligently to make combat airpower a staple of joint operations. We are integrating our training programs with other services, and we are working with them to develop ways to focus combat airpower in the right places the right ways.

We can strengthen these efforts with a fast and flexible acquisition system. We can shape it to upgrade our systems and provide replacements through low-rate production simultaneously. We can tailor it to roll over new products and new manufacturing technology as it builds prototypes that will fight their way into production and still field a few silver bullets along the way.

Together we can build the ready and flexible combat Air Force of the future. Together we can meet and triumph over all the challenges that seem so daunting now, facing an uncertain future. I have great confidence in our partnership.

I look forward to hearing your questions and your ideas over the next two days as we start this journey.

Question & Answer Session

General John M. Loh

GENERAL HATCH: Thank you, General Loh.

You talked about excessive oversight and audit and regulatory relief. Is it too soon, or has any discussion ensued with the new administration about what tack they may take in this area?

GENERAL LOH: Well, I think the new administration has been approached about the problem. It was even before the November election. I know that a lot of the trade organizations have developed an agenda that gets to the heart of the problem of over-regulation and over-management. We in the Air Force have put together some ideas on how to get some regulatory relief. I think together we need to build a program that separates the necessary audit and the necessary management from that which is very burdensome, stifles initiative, and impedes the reduction of cycle time in the acquisition process.

So I look forward to some initiatives coming forward very soon on that subject.

GENERAL HATCH: Thank you. You talked about the importance of a strong industrial base, and as everyone knows, you speak not only from your current position, but also from your experience as an Aeronautical Systems Division commander. What are your thoughts on the distribution of the workload between the Air Force and industry, which spans everything from repair to depot work to new procurement?

GENERAL LOH: Well, I think there should be a balance between the two. Our depots play a vital and necessary role in depot level maintenance: overhauls, some modifications, and some upgrades as our aircraft go through a periodic depot maintenance process.

But I really do believe that, for production of systems, you have to think about what I describe as the lean enterprise, and integrated product development — integrated means manufacturing processes and support processes are incorporated at the outset. It would be difficult, with that kind of an integrated concurrent product development cycle, to see how the private sector could develop a product, and then throw it over the transom to another group of people to manufacture it. I think that may be taking the concept of what the depot is valuable for a bit too far. That wouldn't fit into the mold.

Those are my general thoughts on the subject. There's plenty of work for our depot system to do, and there's plenty of work for industry to do together, as we downsize. We have to reach that right balance. I hope we're not trying to compete one with the other.

GENERAL HATCH: A specific question about the recent air activity in Iraq. How do you assess the effectiveness of our anti-radiation missiles and aircraft systems in the recent skirmishes in Iraq?

GENERAL LOH: I assess their success by the fact that the opposition has decided not to emanate any radars. We have been successful in this latest round of activity. The HARM missiles that were fired appear to have been effective in achieving that objective. That's the objective that we set, and it accomplished it over a short period of time. So they were successful.

GENERAL HATCH: A specific force structure question: how do you see the future of rescue forces, the C-130s and helicopters currently operated by the Air

Force Reserve?

GENERAL LOH: On 1 February, we in ACC just took over the responsibility for the combat rescue forces in the Air Force, and I intend to give them a full mission and a full modernization program. It's going to be tough. They're full-fledged partners, both active and Guard and Reserve together.

We are creating a combat rescue school of excellence at Nellis Air Force Base. I just started that to give the combat rescue community a center of excellence for tactics development, for operational testing, and to serve as a schoolhouse for advanced training, kind of like our bomber and fighter weapons school — a combat rescue advanced training school. We have the planning for that underway right now. It will be operating at Nellis this summer. And it will allow us to focus on the combat rescue mission, which again is vital in wartime and neglected in peacetime.

I've also put together a short modernization program for combat rescue, about $50 million to $70 million a year. We're sending that forward this week to upgrade our HH-60s and HC-130s. It's focused on some much needed improvements for those combat rescue forces, particularly GPS [Global Positioning System] systems and night combat rescue capabilities.

GENERAL HATCH: Thank you, General Loh. Another specific question: is the F-16 a candidate for continuing low rate production until we are ready to produce another new aircraft?

GENERAL LOH: Well, the F-16 currently is in production. It is a good example of a system that, over the years, has continued to be upgraded. We're in the block 50 F-16 procurement right now. I continue to see additional procurement of F-16s. And, yes, it is a candidate for continued low rate production. However, I think there are going to be many more candidates than winners in this business as we look forward. So it's going to be tough to try and squeeze them all in.

But my point is, we need to develop this strategy, the acquisition strategy that accounts for low rate production of several systems. It must be based not just on threat, but on the need to replace systems, and on the idea that the industrial base is almost as important a consideration as a military threat for continued production.

GENERAL HATCH: The next question combines three or four that address the process by which the Defense Department will address roles and missions in the coming months, both within the Defense Department and perhaps with Senator Nunn and the Armed Services Committee. How do you see that process unfolding over the next 90 to 120 days?

GENERAL LOH: Well, that's hard to tell. As you probably know, we have the final changes to a draft of the roles, missions, and functions report that was directed by the Congress to be submitted. It is in its final version and ready for submission to the Secretary of Defense. I anticipate that happening within the next few days or weeks.

What the Secretary of Defense chooses to do with that, I can't tell. But clearly it is owed to the Congress, and the Congress expects it. I anticipate that there will be a lot of discussion and dialogue, both within OSD and the services, and on the Hill, in that 90 to 120 day time period on the subject of roles, missions, and functions. So stay tuned.

GENERAL HATCH: Another question on future aircraft procurement. The A/FX may have a shorter range than once anticipated. The Air Force is still defining requirements for its new multi-role fighter. Any possible linkage between those two programs in the future?

GENERAL LOH: I think everything is open. What I've tried to describe is a new playing field. We have a new strategic planning framework. The Navy has a new strategic planning framework. What defined an AX two years ago may not define an AX today. What defined our multi-role fighter two years ago may not define it today.

So I think that the Air Force and the Navy particularly, because we're the two that are involved in combat airpower, need

to work together — and we are working together — to define what is the right set of characteristics for both a Navy and Air Force A/FX, and perhaps for both a Navy and Air Force multi-role fighter.

General Jaquish is working on that right now. Why don't you ask him that question when he gets up here later, and he'll tell you right up to the minute what's going on.

GENERAL HATCH: A final question combines two or three in the area of intelligence that concern the integration, exercise, tasking, and use of national assets in our air operations. From your position, do you see progress in that general area?

GENERAL LOH: I see great progress in that area. We've had many meetings since the end of the Gulf War with the unified and Air Force space commands, and with the National Reconnaissance Office. We have had substantive meetings with Marty Faga [Assistant Secretary of the Air Force, Space], Chuck Horner [Gen. Charles A. Horner, Commander in Chief, US Space Command and former Joint Forces Air Component Commander in Desert Shield/Desert Storm], and Tom Moorman [Lt. Gen. Thomas S. Moorman, Jr., Vice Commander, Air Force Space Command], in recognition that theater level reconnaissance is a necessary customer base for national systems. The DCI [Director of Central Intelligence] is not the only customer for national systems. Theater, joint force commanders are very big customers for national intelligence, and we now have the means by which we can task those systems to support a joint force commander in the theater.

In fact, my approach to that is: first, let's start using those systems in our day-to-day exercises. We used them in Ocean Venture last year. That was a LANTCOM [US Atlantic Command] exercise where we were able to use a national system.

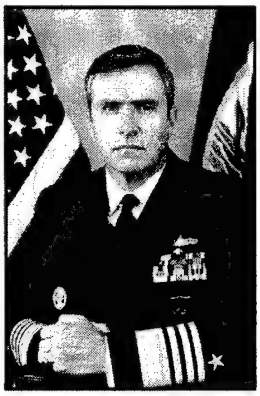
Secondly, each of our operational plans that support our CINCs [Commanders in Chief] has a very detailed annex that shows the capabilities of our national systems.

And thirdly, I want to get to the point where the joint force commander can use the daily ATO [air tasking order] to task national systems to take pictures — do this, do that — of specific areas and targets, just like he would a flight of aircraft. That's working pretty well. We're making great progress there, and we have over the last year.

GENERAL HATCH: Mike, thank you very much for very insightful remarks. We appreciate everything you've done to help with this symposium.

ADMIRAL PAUL DAVID MILLER

"Learning to Change"



All of us here today — military practitioners, our partners in the civilian sector, policy makers, and journalists — all of us recognize the international security environment has irreversibly changed. The calculation of global security is evolving. The accustomed equilibrium of the past forty years has been upset . . . battered by forces of political fragmentation and social upheaval. These dramatic changes and new economic realities call for a re-engineering of our nation's defenses.

The demand for military capabilities is as strong as at almost any time during the Cold War. But the market is changing. For more than forty years, defense planners enjoyed a significant advantage over our corporate counterparts. The market for our capabilities was relatively predictable. The challenge posed by the Soviet threat changed only incrementally over time. Those days are over.

Today military and corporate planners alike must plan for the unknown. We've got to focus on the long term. And if we take a long range view, we can see — clearly — the demand for strategic capabilities is down. We can anticipate the demand for flexible forces oriented toward regional challenges — like *Desert Storm* — will remain fairly steady for the foreseeable future. And we can see a growing demand for humanitarian, peacekeeping and domestic support capabilities . . . capabilities geared to what I like to call future-oriented missions.

The demand for American military capabilities remains high, but the market is changing . . .

On the "investment side" . . . the trends are down. With respect to the changing market, we find ourselves "over-invested" in some areas. We've already begun a careful restructuring of our armed forces . . . establishing a prudent glide slope — a planned twenty-five percent reduction in investment between 1990 and 1995 — continuing the downward trend that has reduced defense outlays by nearly thirty percent in real terms since 1985.

And as spending is coming down, so is force structure. You know the numbers . . . We've already planned to cut a million people from DoD by 1995; planned to close over 800 bases around the world. And we're planning to do it in a measured way — over time — in order to protect — to the greatest possible extent — the magnificent men and women of our current force.

I like to remind people: *"We have what we have."* For a minute, conjure up a mental image of our current force. Picture the tremendous capability. It's the best force we've ever had. We have the best technology, the best combat systems, the best stock levels, the best training, and most importantly . . . the best people . . . ever.

And our force is hard at work — in so many places around the world — in the Persian Gulf and Saudi Arabia, Somalia . . . in the Adriatic and at bases in Europe . . . in the Caribbean and South America . . . the beat goes on. Our people are working as hard as they ever worked during the Cold War. *"We have what we have"* . . . and fortunately, what we have is very, very good.

We started the current restructuring from a position of strength. And as we head down the glide slope toward a smaller force, the task ahead is to decide what capabilities should be retained . . . what capabilities

should be enhanced and strengthened. We're not going to throw out what we have and buy new. We can't afford it . . . we won't be permitted that luxury. And we have a responsibility to our *shareholders* — the taxpayers of this great country — to continue making the best possible use of past defense investments.

So our first challenge — as we head down the glide slope — is to determine the level and mix of military capabilities needed to *match the market* . . . We've got to do that — not immediately — but over the next few years . . . before we go too far down the glide slope and have to claw our way back up.

The second challenge — and it's just as important as the first — is to make the needed reductions in ways which enable us to continue to grow in capability, even as we reduce in size. I'm not saying "we have to do more with less." What I am saying is that we've got to explore ways to do even better with our unmatched capabilities.

The demand for American military capabilities remains high, but the market is changing . . .

By now, all of us are familiar with the risks of failing to meet the market. Just the other day Sears announced they were dropping the *"Big Book . . . "* performing radical surgery on the heart of their corporate culture in hopes of saving the patient. Catalog sales in the United States are at an all time high . . . Look at L.L. Bean . . . A catalog company that provides a model of *customer service and quality* — not just for the retail sector but for all of us. The demand is there, but you've got to keep up with the market.

And today, the market demands that we articulate our evolving roles and missions clearly and concisely. The military has lots of intellectual competitors out there. All you have to do is look at the op-ed page — or even the front page — of almost any newspaper. There are plenty of would-be defense experts willing to race us to the blackboard to re-draw the blueprint for America's future defenses. As military practitioners, we must continue to lead the debate — or the *pundits* and *armchair generals* will carry the day as they sometimes have — to our later regret — during earlier periods of re-structuring.

You can't beat something with nothing. The old ideas don't sell anymore. The Cold War is over. To keep up with the market, we've got to learn to change.

Let me stop here and give you a warning. I'm going to use the word "change" quite a few times here in the next few minutes. That makes people nervous . . . so every time I say *"change"* . . . just pretend I really said *"improvement."*

That sounds a lot better doesn't it . . . *"improvement."* Not nearly as *threatening.* And if we do our job right . . . the *changes* we make will be *improvements.*

We've already made lots of . . . uh, *improvements* . . .

The Air Force — under the inspired leadership of General McPeak — in standing up the *Air Combat Command* and *Air Mobility Command* has undertaken perhaps the most sweeping, forward-looking, and far-reaching reorganization yet attempted by any service.

General Powell's Roles and Missions Report — which many of you have no doubt read about and others have been closely involved in — that report advances fundamentally the cause of change.

And we're confronting change in more concrete ways — in Iraq, in Somalia, in Bosnia.

Yes we have made a lot of changes . . . and we're planning even more. But . . . to paraphrase one Joint Staffer recently quoted in the New York Times, *"some people look at all this and see revolutionary change, while others see no change at all."*

I don't know which is more frustrating: listening to the outside *critics and experts* claiming we're refusing to change, or getting *jostled* and *jarred* by all the internal *speed bumps* one encounters on the road to making change where it's really needed.

Some days I feel like the preacher who said: *"I just wish more folks who criticized the church were members of the church . . . then they'd really know what's wrong with it."*

So today, there's little need to underscore for this audience the magnitude of changes already made. I'm going to talk to you instead *as members of the church* — about why we must *continue* to change. Because — even with all the changes we've made — I must report, from my vantage point as a joint commander, the American military — as an institution — is only beginning to fully grasp just how much we have to change . . . and how little time we have to do it.

Permit me to elaborate . . .

The Cold War provided the backdrop for the careers of almost everyone in this room. That strategic framework furnished a relatively fixed set of assumptions which changed only incrementally over time. For four decades, it was comparatively easy to structure U.S. forces. "The threat" was the Soviet Union.

The task of re-engineering our forces to promote stability, peace, prosperity and democracy in the post-Cold War world is not so well-defined. All our assumptions — with respect to force structure, with respect to stock levels and infrastructure, with respect to how we organize and train — all those assumptions have to be re-thought.

And you know, that's a lot easier said than done. We're trapped by our old *mental models* . . . prisoners of our individual views of what the world is really like. We've learned to insulate ourselves from new ideas which threaten our old, trusted assumptions. We reflexively defend the status quo . . . after *all* . . . *"that's the way we've always done it . . ."* And we take out bureaucratic *insurance policies* to guard against change.

Now . . . all of us in the military are undergoing the difficult process of *"learning to change . . ."* accepting that *"the beliefs and assumptions which served us well in the past need modification."*

But it's tough. We're always on the lookout for a new "comfort zone." We want to put all this change behind us as quickly as possible so we can settle back into comfortable patterns of thinking for another forty years.

The problem is . . . any new equilibrium, will be a dynamic equilibrium — a constant state of change — and to keep up, we're going to have to learn to keep pace with that change.

Let me say that one more time . . . We're going to have to learn to change. We're going to have to build into our military — into our *corporate theology* — ways to accelerate organizational learning, build consensus, and promote change.

Ray Stata, the chairman of Analog Devices, says that — in the time ahead — *"the rate at which individuals and organizations learn to change may become the only sustainable competitive advantage"* — and that's especially true in knowledge-intensive organizations like ours.

We've got to minimize the time lag between challenge and response — not just on the battlefield, but in the halls of the Pentagon.

Let me give you an example . . . and it gets right to the focus of this conference — *The Role of Airpower in Joint Campaigns.*

Two years ago, we were in the midst of *Desert Storm.* That experience underscored — once again — the need to clarify the role of the Joint Force Air Component Commander . . . the JFACC. Nearly every *Desert Storm* "lesson learned" pointed to the JFACC as an area that needed joint attention.

So twenty months ago — while I was commanding the Atlantic Fleet, Admiral Edney, my predecessor at LANTCOM asked Mike Loh and I — his air and naval components — to start working jointly on a JFACC Concept of Operations . . . *to fix the things that needed fixing.*

Mike and I work pretty fast . . . it only took us *sixteen months* to come to closure on a *thirteen* page document. Last September we signed it. So did General Burba from Forces Command. Then we sent it along to the Chairman and the other CINCs . . . hoping to get them all on board. Today — I'm happy to report — two years after *Desert Storm* — we almost have an approved JFACC Concept of Ops. LANT and PAC are on board. EUCOM is almost there. I expect we'll also get agreement

from CENTCOM and SOUTHCOM.

Two years. Two years to fix something everyone agreed needed fixing — an issue over which there was no disagreement on the fundamental principle.

We won't often have the luxury of that much time. We have a commitment to the American people to keep up with change . . . To do that *we've got to minimize the time lag between challenge and response.*

General LeMay understood that. He built it into the theology at SAC. Today, the challenges are different. But we've got to put as much *energy* and *enthusiasm* into getting new ideas off the ground as we put into getting the bombers airborne. And just like General LeMay and General Dougherty did at SAC — *we've got to engineer the obstacles out of the system.*

During the Cold War we viewed the Chairman of the Joint Chiefs, the Service Chiefs and the CINCs much like *ship's captains.* Their job was to keep the vessels entrusted to their care on a safe course and off the rocks. But our future leaders are going to have to be designers and builders as well as operators. To accomplish their missions, they will have to not only set the course, but also continually re-engineer our organizations and re-shape doctrine.

Let me take a moment to sketch for you, from my vantage point as a Unified Commander, my own mental model of America's future conventional force.

First, our force will be more *capabilities-based* than *threat-oriented.* That means our forces will be shaped more by the capabilities they contribute toward achieving our national goals than by the traditional, neat *rack-and-stack of threat, capabilities,* and *intent.*

Second, a smaller force will put a premium on *teamwork.* That will call for even greater cooperation inside the military and out. We are going to have to wring the full potential value from every joint military, multi-agency and multi-national effort. General Powell has emphasized this again and again . . . *teamwork, teamwork, teamwork.* He put it in Joint Pub Number One. In fact, he thought it was so important, he put it on the cover: ***"Joint Warfare is Team Warfare."***

Third, our armed forces will remain a *sword* for deterrence, crisis response and war-fighting. But the American people have purchased the technology and training to do more. Our military is the only organization with the *core competencies* and capabilities to take on the *future-oriented* peacemaking, humanitarian, and disaster relief missions I spoke of earlier.

Finally — and most importantly — I envision the American military committed to a continuous process of review and self-appraisal leading to change — *improvement* — with Joint operations as both the driving force and the yardstick for success. I envision a force which has learned how to change.

Before I take some questions, let me spend just a few more minutes expanding on this business of *Jointness.*

To defend America's interests, our military must still be in many places around the world. The Chairman and the Unified CINCs are looking for innovative ways to do that job without over-committing tomorrow's smaller force. As force levels decline, we're re-calibrating the needed balance between forces based overseas, forces which deploy, and forces based at home.

To do the job with a smaller force we must make full use of our nation's total joint military kit. The CINCs should be able to go to the cupboard and find the capabilities they need "on the shelf" — jointly trained and ready. And from that *full kit of capabilities,* they should be able to "write a prescription" for the specific dose of joint capability they need positioned forward in their AOR at any given time. If we do our work well — jointly organizing, planning, training — those tailored joint forces we send forward will be backed-up by jointly trained and ready forces stateside.

We also need to sell this idea of *jointness* to our potential coalition partners and within NATO. And — it's fair to say — we still have some *selling* to do here at home.

To sell *jointness,* we've got to convince the doubters on the real efficacies of joint

practices and joint operations — encouraging them to view our full joint capability from the perspective of the Joint Force Commander — whether it's an air campaign, a land campaign, or a humanitarian relief effort. We need to clear the books of Cold War standards and criteria so we can move on to addressing the fundamental issues . . . even when it calls for backing off from demands for unique service "insurance policies."

I don't want you to leave here thinking this sermon on *change* and *jointness* is aimed at the Air Force . . . it isn't. This sermon is for all *members of the church* — regardless of the denomination or congregation to which they belong.

America's fundamental national interests haven't changed. But the role of our military in defending and advancing those interests is becoming eminently more challenging. To meet those challenges, we've got to *learn to change* . . . weaving into the very fabric of our military services an enduring commitment to continuous improvement. The *teamwork* needed for joint operations will be our yardstick for success. Because there is one thing we can count on — and I want to conclude with this thought — that is, **in the time ahead *"America may need less military, but - you can be certain - we won't need our military any less."***

Question & Answer Session

Admiral Paul David Miller

GENERAL HATCH: Thank you, Admiral Miller, for your remarks. We have a number of questions today. The first one is on the Navy's recent document, "From the Sea." Could you give us your views on what "From the Sea" means in terms of the Navy's view of changing roles and missions?

ADMIRAL MILLER: Sure. "From the Sea" is a white paper that came out just a few weeks back. It put together in a very readable fashion the changes that our Navy and Marine Corps are going to have to make to become even more relevant in the time ahead.

But the concept that I put on that viewgraph a moment ago even takes the next step. "From the Sea" talks about Naval, which includes Navy and Marine, expeditionary capability. But the next step is rolling in the total military capability that our country has.

So "From the Sea" is a very good defining document. It's one that melds nicely into the joint practitioner's headquarters. And we'll be able to draw on that and overlay Army and Air Force capabilities to make the full joint package that I'm talking about.

GENERAL HATCH: In that context, Admiral Miller, would you comment on coordination in the future between Marine and Navy air, and what direction it will take?

ADMIRAL MILLER: Closer coordination. I'd like to tell you about what we did on the U.S.S. Teddy Roosevelt. When I became CINCLANT [Commander in Chief, Atlantic Command], the second message I sent out was to CINCLANTFLT [Commander-in-Chief, Altantic Fleet] and to MARFORLANT [Marine Forces Altantic]. It said, "Put together a plan that will permit us to embark Marines on the aircraft carrier Teddy Roosevelt. Not just Marines for security, but combat Marines, and an air combat element."

You can imagine how that message was received in some places, because to do that, we had to break the mold of the traditional packaging of the air wing. That was the theme that I was talking about here. We had to take off tactical air squadrons to put Marine helicopters on board. We had to take off sailors to put 600 Marines on board, about 1/10th of the capacity of Teddy Roosevelt.

We added a Marine F/A-18 squadron. Why? Because the Marines have F/A-18s, fixed wing aircraft, that can contribute. From one vantage point, it doesn't make much difference what aircraft is on board, but it's the contribution, the capabilities that the Marine F/A-18 brings to the scene of action that matters.

But with the Marines on board, they started to train together. And I sent out the sailing order. [JCS Chairman Gen.] Colin Powell approved it just last week. So the integration is getting tighter.

This is what we did: we put 200 troops plus the air element, which is about 600 Marines, and we tailored the aircraft carrier wing. We gave it selective capabilities for contingency response. It cannot do as much as a full amphibious ready group. But it can be a ready asset for the forward CINCs in crisis.

But how we adjusted the wing illustrates the point that I'm making about changes. The standard Teddy Roosevelt wing has 16 F-14s, 27 F/A-18s, and 12 A-6s, or 55

tactical aircraft. There was a lot of talk that if you restructure the wing, you won't be able to send as much of that fist as I was talking about. But in the special purpose MAGTF [Marine Air Ground Task Force] wing, we're sending 54 F-14s, F/A-18s, and A-6s. One aircraft difference.

And that wing is stronger than the wings we have currently deployed, because we made sure we put the racks on the F-14s, and every pilot is air-to-ground capable and everyone is qualified on those F-14s.

So we're sending the carrier with 54 air-to-mud capable aircraft, and 40 fighters. We're not losing any capability. We're tailoring it for the mission. What did we take off? We took off the S-3s. Why? There is no ASW [anti-submarine warfare] threat. There hasn't been a potentially hostile submarine in the Mediterranean since 9 December 1991. So we took S-3s off. We reconfigured the helicopter mix. But we put 6 HH-53s on to carry the Marines, and four forward firing Hueys. We're working on the USS America next.

You know one of the things that we were challenged on here? That we were not bringing in enough organic tankers. I called Mike Loh and said, "Mike, we've got to exercise with the tankers." That training is going on there right now. The Teddy Roosevelt doesn't have any organic tankers, but they're working closely with the composite wing, and they went through the training period. The tanking worked well. It will work well in Europe.

So we have to tailor to the mission that we have ahead. That's what I'm talking about with regard to Navy and Marine integration. Change!

GENERAL HATCH: Thank you, Admiral Miller. Specific question. There have been discussions that indicate the A-6E may be phased out. What is the future of the A-6?

ADMIRAL MILLER: With what you've seen on that screen, the future's pretty bright. We're packaging as many of them as we can get into our deploying aircraft.

But the question, I think, is centered at something they're hearing in the halls of OPNAV [Office of the Chief of Naval Operations]. I don't know what they have put on their little sheets with regard to the future.

The Navy has an air plan that comes out about once every three months. They're adjusting it. It's clearly going to depend on what that top line figure is. All the Pentagon planners are going to have to address that in the time ahead. There will be adjustments to the air wings. The A-6, which is an aircraft that has served us very well for so many years, will be part of the overall spin that's put onto the air wings of the future.

GENERAL HATCH: A final question, and this one is the $64 question, Admiral Miller. You spoke about the competition for resources, the decreasing budgets. Will the Navy be able to retain 12 carrier battle groups and still find the resources for everything else they need in the future?

ADMIRAL MILLER: Absolutely. Why? Because we're going to change. We are not going to deploy battle groups the way we deployed them for the last couple of decades. If we leave the system unchallenged with regard to employments in the future — and the unified CINCs have to challenge it — we would deploy X number of ships with every carrier, X number of ships with every yard.

The concept that I flashed to you involved moving Marines to the carrier and smaller air wings tailored to do the job better. What's that going to mean? It's going to mean we keep the capabilities we need. The nation needs 12 carriers. Why? We need mobile air fields. We need that capability to do more, not less. But we will be able to keep them.

GENERAL HATCH: Thank you, Admiral Miller. It is pleasure to have you here today. We appreciate your insightful remarks. Again, thank you very much.

Lt General John E. Jaquish

"Acquisition: A Reflection of Commitment to Joint Warfare"

Thank you, General Hatch. I'm going to focus on acquisition as a reflection of our commitment to joint war fighting. I'm going to discuss some of our current and future programs, and follow up with some thoughts to outline the challenges that we face in the acquisition community.

As changes rapidly occur in the world, we must be responsive to new types of conflicts — and a wide range of applications of our forces, as demonstrated by our war fighting in Iraq, peacekeeping in Korea, human relief efforts in Somalia and Yugoslavia, and the war on drugs which General Loh touched upon.

Our acquisition programs must support the full mobility long-range and conventional in-theater war fighters in these demonstrated applications of our forces. The current JCS roles and missions review provides that focus for the future, and I'll have some remarks on that review a little later.

Also, budget realities — and as you know, we're in the throes of a very significant exercise back in Washington, and I'm very thankful that I'm here — will shape our future by eliminating duplication and increasing our need for joint war fighting systems.

The declining budget will provide a challenge to Air Force leadership, which will have to make the tough decisions to support force modernization. And those decisions will reflect any program's contribution to joint operations. But regardless of the scenario, our CONUS[continental United States]-based bombers provide the capability to respond rapidly and decisively around the world to regional threats.

The recently approved Air Force bomber roadmap outlines the operational concepts, and the structure for the bomber force. Continuation of this plan and execution of this plan is essential.

The bomber roadmap calls for the B-1 to be the backbone of our bomber force. And under Start 2, which, as you know, has yet to be ratified, the B-1 will not count as a nuclear platform. Its sole role will be as a conventional penetrator with the capability to attack the bulk of time-critical targets early in the conflict using direct and stand-off munitions.

The B-1 also will add mass and precision to the composite strike packages used to sustain the theater campaign. Funding to support the B-1 in its important role has received top priority. Enhancements to complete the transition from a nuclear-focused system to a conventional bomber include procuring the deferred support equipment that we have been unable to fund adequately in the past and funding the improved electronic counter measures equipment to enable the penetration in all but the highest threat environments, and the critical improvements to conventional capabilities for more precise attack capabilities, both direct and standoff.

The B-1, as I said, will in fact be the workhorse of the conventional bomber force for years to come. The primary mission of the B-2 is to enable any theater commander to hold at risk and, if necessary, attack with conventional weapons an enemy's warfighting potential, especially those time-critical targets which if not destroyed in the first hours or days of a conflict would allow unacceptable damage and unacceptable challenges to be inflicted upon

the friendly side.

The B-2 will be used to hit the toughest targets, penetrating and surviving, unhinging the enemy's strategic plan, and neutralizing defenses to allow less stealthy systems to operate. In mid-January of this year, the Secretary of the Air Force's recent decision on the low observable closure plan resolved the B-2 signature test anomaly that we had identified in 1991. Our test results show we are now achieving, and in many cases exceeding, specification levels and that we are clearly meeting the warfighter's requirements.

As it turns out, we had been on the correct path all along, and through our improved diagnostics, we were able to focus and fine-tune our approach, which enabled us to arrive at this solution. Flight testing with that platform has gone exceptionally well, as is structures testing with 10 major ultimate static tests accomplished successfully. And lifetime durability testing was completed last June, and qualifies the structure to its full life of 10,000 hours.

The first aircraft delivery is expected at Whiteman Air Force Base. It is scheduled for December of this year. The Air Force believes that 20 B-2s are the minimum number needed to unleash the full potential of the overall bomber force.

For those bombers to be most effective, we need to equip them with a combination of standoff and direct attack munitions, each capable of high probability of kill from each and every delivery. TSSAM, the Tri-Service Standoff Attack Missile, provides the heart of our standoff capability. It is a low observable, autonomous precision air and ground launched conventional cruise missile with two warhead options.

This joint program will provide all three services the capability of deep force projection with a high probability of target destruction. The program has just completed a thorough review by the JROC [Joint Requirements Oversight Council] and the DAB [Defense Acquisition Board] and has come through both with flying colors.

Recent test results have been outstanding, and TSSAM has enjoyed very strong congressional, service and CINC support, as indicated by its place as the centerpiece weapon on the DoD joint standoff weapons master plan. It is an excellent example of future weapons that will allow us to attack a wide spectrum of high value targets with fewer aircraft, and ensure their survivability.

JDAM, the Joint Direct Attack Munition program, is also a joint Air Force/Navy effort to develop an accurate 13- to 16-meter, and a precise 3-meter weapon for attacking targets in adverse weather conditions. This program is in response to a critical need identified during Desert Storm. And it is an excellent example of a joint acquisition that resulted from merging two independent programs, one in the Air Force and one in the Navy.

JDAM will develop an INS/GPS guidance kit and a terminal seeker for use on inventory weapons, and in that way will leverage our large investment in our Mk 80 series bombs. We anticipate a milestone. One DAB will occur this spring, and JDAM will enter a dual contractor prototype phase later this year.

While bombers are supporting the long-range attack mission, we must get our air and ground forces into operation quickly. Demands for airlift have increased significantly in the recent years, and the C-17 will replace the C-141 with significant improvements in performance and reductions in operational costs. It combines long range and outsized cargo capabilities, such as the C-5 with short take-off and landing and ground maneuvering capabilities of such airplanes as the C-130.

The C-17 will provide high reliability, and lower maintenance and manpower requirements than our current airlift fleet. In mid-January, the Under Secretary of Defense for Acquisition reviewed the status of the C-17 program and noted that the C-17 supports a critical national requirement, that the C-17 design is sound, and that all the courses of action needed to address all the problems identified in testing are prudent with reasonable risk.

The review also concluded that the C-17 remains the most cost-effective option with significant margin to meet our airlift requirements. With a continued reduction

in our forward presence, we must have enough airlift to respond quickly to meet our joint obligations. And the C-17 will provide us that capability. We anticipate first aircraft delivery to Charleston later this spring.

During the insertion of our air and ground forces, and throughout the spectrum of joint warfare, controlling the sky is critical. Air superiority provides that freedom of action for land, air, and naval forces, while denying this advantage to the enemy. The F-22 will ensure air superiority well into the next century. It will replace the F-15, which has done an absolutely superb job over a great number of years, but at this point, it's falling behind and may no longer be able to keep up.

The F-22 combines stealth, super-cruise, high maneuverability, increased range, and superior reliability and maintainability. It will have a greater sortie generation capability than our current fighters, and will be able to deploy with less than half the airlift support. The F-22 program has entered the EMD phase, which will consist of the design, fabrication, and testing of nine flight test vehicles.

The Secretary of the Air Force recently approved a re-phasing of the F-22 program, primarily due to increased contract or overhead expenses, as a result of cancellation and reduction in other acquisition programs, also influenced by congressional cuts in 1993 and by some program growth.

I should stress here, though, there was no technical reason for the rescheduling. The Air Force simply chose to re-phase the program and live within the available dollars, rather than add funds to it. The F-22 is absolutely a must-have system, and we must continue to flow its technologies down to the A/FX.

Our newest air superiority missile, AMRAAM [Advanced Medium-Range Air-to-Air Missile], is currently in full service with the F-15 and the F-16. We entered full rate production early last year, and we're continuing to improve the missile as we look forward. We've now had three engagements over Iraq with AMRAAM, with two confirmed kills and one likely kill on the third, but at this point they've not sorted that out.

There was some question around the building inside of Washington as to whether or not the live fire advocates will accept those first two kills as data points. The rumor was that both missiles were destroyed on impact.

I would like to add here a comment on the value of having two sources of production and, therefore, a very strong competitive base. By the end of this month, we'll be able to announce the award of our most recent competitive buy. And this is for the lot 7 missiles. The average unit cost, that I cannot talk about now other than in general terms, will be significantly lower than even we had hoped. And obviously, the benefits from this type of strong competition will be clear to even those who were advocating in the past to have a single source down select, and to proceed with a single contractor.

The A/FX will fill the medium-range, all-weather interdiction role. It will replace the F-117, the F-111, and the F-15E sometime beyond 2010. As you know, Air Force personnel are fully integrated into the Navy program office, and there is also a single requirements document that has been approved and signed by both the service chiefs. And there are no requirements in the A/FX that are unique to the Air Force.

And our goal is to buy a mature, off-the-shelf A/FX to the maximum extent possible. A DAB will be conducted for a program review this spring, and a milestone one decision is expected sometime in FY '94. The Air Force remains committed to the A/FX.

Joint STARS [Joint Surveillance and Target Attack Radar System] is an Air Force/Army system that provides a rapidly deployable airborne platform that will collect and disseminate near real time surveillance targeting information on moving and stationary targets. Equally important, J-STARS provides cues to, and can be cued by other manned and unmanned systems, providing a force multiplying

effect.

J-STARS, as everybody knows here, first proved its worth in Desert Storm, where it provided vital information about Iraqi force locations and movements, and essentially was the eyes and the ears of the force commanders, allowing us to appropriately concentrate and mesh our joint forces.

Joint STARS recently completed a critical system level performance verification test, which was the significant thing that we needed to do prior to having a low rate initial production DAB later this spring. It is a must-have system.

CTAPS. Contingency TAPS [(tactical air control system) automated planning system] is an Air Force program that interfaces with the Army, Navy, and Marine Corps to provide reliable, timely information for effective battle management with a secure command and control database.

CTAPS will provide automated planning and execution decision support for the joint force air component commander [JFACC] and command and control for all Air Force wings. We have modular air operation shelters which will allow rapid response to worldwide contingencies. They have already been deployed to 9th and 12th Air Forces, and are currently in service with CENTCOM in Southwest Asia.

At the wing level, the CTAPS architecture includes the wing command and control system, with prototypes in place at RAF Lakenheath and Misawa, Japan, and the installation is to occur at four other operational bases later this year.

Additionally, the JCS has selected the air task order planning software module and CTAPS as the standard for all services. We're expanding and enhancing CTAPS from a MAJCOM initiative to a full acquisition program to be managed at the Electronics Systems Center at Hanscom Air Force Base. CTAPS will be the core of our theater battle management capability.

In space, FEWS, or the Follow-on Early Warning System, is an infrared sensor satellite system designed to replace the Defense Support Program. FEWS will provide continuous worldwide tactical warning and attack assessment coverage of both intercontinental and theater ballistic missile launches, with a very high probability of detection and quicker warning to field commanders — an important need identified in Desert Storm.

The satellites will be in high earth orbit to provide coverage with a faster scan rate and a shorter — and a better — sensitivity to detect even dimmer and shorter burning missiles. During the summer, a DAB will review the first year of work in the demonstration and validation phase and assess the maturing critical technologies, such as focal planes, optics, cross links, and the ability to support that with adequate software.

FEWS will drive down the annual operating cost by having longer satellite life and a single operational ground site, which in turn will set up a requirement for fewer people and less maintenance.

Looking further to the future, the multi-role fighter is the planned replacement for the F-16 in the post-2010 time frame. The MRF will be a low-cost aircraft that will complement the more capable F-22 and A/FX fleets. Air Combat Command is currently working with Air Force Materiel Command on a mission area assessment to support a milestone zero DAB sometime in FY'94.

It is my belief that it would be very important for the Navy to join the Air Force in this requirements definition process, as we prepare the mission needs statement. I believe we should explore the possibility of a joint program that would meet the unique requirements for both of our multi-role fleets.

Such an effort, however, will in fact require some compromise from both services, and the challenge is to work out a joint solution so that both services' needs can be accommodated in building that common platform.

Until an affordable MRF can be designed, produced, and fielded, the Air Force must sustain its current multi-role force. The bedrock for this sustainment strategy is the continued production of the F-16 and modifications to the F-16 fleet.

With the many challenges ongoing in the world today, we face both opportunities and challenges. We continue to strive to improve the acquisition process, and work smarter and more efficiently. And in order to have stability and efficiency in the acquisition process, we must clearly have some stability in the budget process. Continual cuts to our ongoing programs cause serious disruptions in program performance, schedule, and cost.

Congressional influence in our program is sometimes disruptive beyond anyone's intent. We currently have a real problem with several tactical air modernization reports required by the authorization and appropriation laws. These laws affect our F-22, F-16, and MRF programs, as well as the Navy's A/FX and F/A-18 E/F programs. The most restrictive of these laws limit the obligation authority to 65 percent until 60 days after the submission of four items, including the JCS roles and missions report, an affordability report from the Secretary of Defense with comments, a Defense Science Board report, and a revised A/FX acquisition plan.

The Air Force is deeply concerned about these series of reports required for the release of our funds, since many of these reports are beyond our control. The F-22, for example, runs up against the 65 percent restriction in June, meaning the reports must be completed and submitted by late March. And the impact is severe, if these funds are not released.

The F-16 program is another example in which the obligation of development funds has now been stopped. We are now looking at slipping at least one quarter's worth of this year's work into the next fiscal year. And clearly that's not a very efficient or, in the long run, perhaps a very cost-effective way to do business.

While those congressional modernization concerns are very important, and need to be addressed, they may cause major interruptions to ongoing programs that are otherwise on track.

Another challenge for the acquisition community is the need to sustain our industrial base. We must continue to have a base of competent and competitive contractors to accomplish our current and future acquisitions. The future challenge for industry, that General Loh had alluded to earlier, is to learn how to produce systems in lower quantities over several years at the same or lower cost. Significant change, both inside and outside of government, to our processes will be required to enable that.

And finally, we're challenged in the management of our work force. As our force structure becomes smaller and takes on a new shape, we can expect continued discussions of the possibility of a consolidated purpose acquisition core. This argument claims increased efficiencies, if all science and technology, all test and evaluation, and all acquisition are centralized within the Office of the Secretary of Defense and DoD agencies and control.

From my perspective, nothing could be farther from the truth. Centralization, as we all know, as a rule does not lead to efficiency. In the case of this centralization, it would break the critical back and the link and the vital relationship between our warfighters and our developers. And once you break that link, I think in years to come we would be very hard-pressed to go off and do another Desert Storm.

In closing, the Air Force will continue to strive to meet the needs of the joint warfighter through excellence in our requirements process and our acquisition system. We in the acquisition business are committed to meeting the challenges of the future, and to keeping our Air Force the best equipped force in the world.

Thank you very much.

Question & Answer Session

Lt General John E. Jaquish

GENERAL HATCH: Thank you, John. You've set the record for the number of specific questions the table has received. We won't be able to get through all of them. However, General Jaquish will be with us this evening.

The first one asks you to discuss the Department of Defense Inspector General's report on the C-17.

LT GENERAL JAQUISH: Let me just say that, first and foremost, the Air Force is very concerned about the report, and very concerned about the suggestion in that report that certain Air Force individuals be disciplined. The Air Force will in fact establish the full circumstances and facts associated with that. I can tell you absolutely, if anybody has done any wrongdoing, we will take very swift action to correct that.

Having said that, when you read the report, it is very general in nature. It doesn't have a lot of specifics. When you look at it, it appears that they've gone over a full series of old material that has been around. So we need to strike out and establish the facts. We're very eager to do this.

I can just tell you, on behalf of the individuals that the report mentions, that I have talked to them all. They are confident and very eager to get their story out under sworn testimony. They want to make sure that everybody understands exactly what happened.

I would also point out to you, I think as you all know, that no money flows directly from the Air Force to any contractors. It flows through Defense Contract Management Command. In the case of the C-17, all of that money has been audited by the Defense Audit Agency.

So again, we are very concerned about that report. We are going to get to the bottom of it and establish a good factual base. And again, if we find any wrongdoing, we intend to take swift action.

GENERAL HATCH: Thank you, John. The second question asks for your views on balancing future depot workloads between government and private industry.

LT GENERAL JAQUISH: This certainly is a much discussed item. You know, Air Force depots do certain work and have certain capabilities that are as much a part of our industrial base as anything else in aerospace industry.

Having said that, though, there are significant restrictions, by law, as to the degree to which the Air Force can compete, or allow that work to be competed, outside of the Air Force. There is a law on the books that says 60 percent of the work done at depots is core to the services, and cannot be competed. It goes on to say that the balance of the 40 percent, only 10 percent of that can be competed.

Now, the Air Force is working this very hard. We think the establishment of a 60 percent core is too high. We think there needs to be a core, but that is too high. From my perspective, I would also say that it's not a matter that the government is now competing with industry. Quite frankly, I think that industry is now being allowed to compete with government for things that, in the past, would have been just automatically done within the government.

So we are going to continue to work this issue. There's a lot of discussion between the services about the proper structure in the depots, and whether or not there

ought to be some commonality in those depots. But it is a significant issue, and one that I think the Air Force is representing fairly.

GENERAL HATCH: Thank you, General Jaquish. Some specific program questions. Please comment on the current status of the JPATS [Joint Primary Air Training System] program.

LT GENERAL JAQUISH: The Air Force is delighted with the current status of the JPATS program. We had a DAB [Defense Acquisition Board meeting] last January, and as a result of some very good cooperation between a lot of elements within the Air Force, and a lot of elements within OSD, we finally got a green light to proceed on with that program. We have the authority now to release the draft RFP [request for proposal] and start down that process. In the process of doing that, there have been some changes to our intended-but-never-official acquisition strategy. But it's certainly nothing that we can't live with.

So I think we're very happy with it. I know Mr. Yockey [former Under Secretary of Defense for Acquisition] when he chaired the DAB, was very happy with it. Thankfully, we're off down the street now and running on this program.

GENERAL HATCH: Are Air Force and OSD aligned on the close air support program for F-16s and A-10s?

LT GENERAL JAQUISH: Yes and no. As you know, the Air Force had a plan in place several years ago, certainly when budgets and force structure were a lot higher, as to how to proceed and what sort of modifications we were going to put on the F-16 to improve its capability to do close air support specifically at night.

More recently, within the last 18 months, Air Combat Command, with the benefit of our Desert Storm experience, looked at its requirements from a financial perspective and a warfighter's perspective. ACC decided that the best F-16 option was to modify some existing block 40 LANTIRN-equipped [Low Altitude Navigation and Targeting Infrared for Night] aircraft to make it more capable of working close air support.

We have been asked by OSD to do a study. We are in the process of doing that study, which is due in March. It will compare the warfighting effectiveness of our previous approach with our current approach. And we think that that will be a very successful comparison, because in fact, while we have changed some of the modifications on the F-16, we have added night vision goggles to the A-10, and we have funded a missile warning system for the F-16. So we look forward to that comparison, and we think it will turn out just fine.

GENERAL HATCH: Thank you, General Jaquish. Would you comment on the current status of the Milstar program?

LT GENERAL JAQUISH: As most of you know, we have restructured Milstar in the last two or three years, as a result of the decline of the Soviet Union. Milstar had been very heavily focused on satisfying the strategic users. We got a lot of congressional direction to put more emphasis in that program on satisfying the tactical users. There's been a great deal of discussion on what sort of polar coverage you need from Milstar. I think we fairly well sorted through that.

We are now in position to execute a Milstar program that is clearly different than it was some two or three or four years ago. It is down-scaled in a lot of ways. It is cheaper and perhaps more affordable in its current form. So we're off doing that.

GENERAL HATCH: Thank you. A question on inter-operability with the Army and the Navy and Air Force and Marine Corps, with regard to radios, refueling equipment. Are we making joint progress in meeting those goals?

LT GENERAL JAQUISH: Well, I think we are. I mentioned CTAPS [Contingency TACS (Tactical Air Control System) Automated Planning System] earlier, and the fact that the CTAPS structure had been identified as the over-arching structure for all air tasking orders in the future. We've done a lot of work with the Army on getting the right kind of radios in our airplanes, so that when we're doing close air support,

we have the right kind of connections.

We have other discussions ongoing with the Navy. Particularly as the budgets come down, and we look for more commonality, I think you'll see a lot more of that sort of activity.

GENERAL HATCH: A final question. You mentioned the Tri-service Standoff Attack Missile [TSSAM] program. Is the Army still fully supporting the program?

LT GENERAL JAQUISH: You know, I could easily say that you should really have to ask the Army on that. But I have been told by the previous USDA [Under Secretary of Defense for Acquisition] that the Army has been instructed to remain in that program.

There is a congressional law that kicks in very shortly. That law requires that any service involved in a joint program must go through USDA and get his approval if they're going to change substantially their participation in that program, or withdraw from that program. This law requires the Secretary of Defense to write a regulation to that effect. That regulation is in the works. So I think there will be more and more pressure to maintain a good solid marriage when we get into joint programs.

But specifically with TSSAM, I've talked to the right people in the Army. They see the benefit of TSSAM, and my understanding is that it is in their funding base. But I would be the first to tell you, there's a lot of activity going on in Washington right now, and there isn't much that's not on the table. So we'll just have to see how that comes out.

GENERAL HATCH: Your responsibilities are very wide-ranging, John, and we appreciate all that you do. Thanks very much for being with us today.

LT GENERAL JAQUISH: Thank you very much.

General Robert C. Oaks

"Airpower—A Work in Progress"

Thank you, Monroe. It's a real privilege for me to be here. It's a pleasure to talk to this distinguished audience about airpower in the joint arena. The Air Force Association serves us well as it brings together responsible and knowledgeable Americans with a common interest in the continued development of the world's greatest Air Force.

Notice I said "continued development." Our Air Force is, indeed, a work in progress. This Association does the nation a great service as it provides a vibrant forum for discussion of the issues and concepts required to keep this work progressing. I know I speak for all airmen when I tell you that we're grateful for your support and for the services that you provide.

I regularly say that the Air Force Association is grass roots airpower in America. And I believe that. And I know you believe that. And that's one of the founding principles.

This Association does all the work that it does, and lives on great volunteer effort. It does it to project and to promote airpower. And that's done at the local level, at the grass roots level. It's done by you in your communities. Done a little bit in Washington, but there's a lot of people there that work that. But it's done at the grass roots level in the communities of America. And you represent that. You are the spokespersons for airpower in the communities.

I liked Admiral Miller's use of the slides and the trends. He said resources are down. And [Gen.] Mike Loh said workload is up. I'd like to summarize their talks that way. And they talked about it in some detail. But you need to go back and tell the communities that you live in that you represent airpower, you believe in airpower, and that there is a crisis today.

Mike talked a little bit about it. It's a resource crisis. He talked about how we're in competition. And we are in competition. You all understand competition. You've all got competitors, and some of them might even be in this room. And that's healthy. It's healthy for airpower, it's healthy for sea power, it's healthy for America.

We've got competition, too, and we're in competition with every social program that anybody can conceive of for resources. So it's very important today — critical today — that you take the opportunity to get before the Kiwanis Clubs, the Rotary Clubs, and anybody else that will listen, as people that believe in airpower, and say you heard it from the people that see it from the top that we have a crisis. And it's a crisis of declining resources and increasing workload.

From the USAFE [U.S. Air Forces Europe] point of view, I'd steepen that slope a little bit. We had 30 fighter squadrons in USAFE. And we're going down to 10, hopefully, but I suspect it will be lower than that. That's a pretty steep slope.

And then our workload is about the same kind of steepness. But it's going up dramatically. So I say to you today, take advantage of what you've heard thus far, and prepare yourself a little talk. Now, that's not what you asked me to come speak about, but I couldn't help but highlight that to you and tell you that I think it's a critical time to make that pitch.

Now, my remarks today on the evolving role of airpower in joint operations are meant to be thought-provoking. And hope-

fully they will stimulate some discussion. They should not be taken as a final, doctrinal statement. We don't have a final, doctrinal statement. It's a work in progress.

This afternoon, I'll first discuss airpower, then joint operations. Then finally I'll try to bring the two together in a meaningful way.

In the early years of aviation, airpower visionaries such as Douhet and De Seversky promised capabilities for airpower that are only today beginning to be realized. And that's important to keep in mind.

Over the intervening years, as modern airpower has developed, the debate has raged over whether airpower has fulfilled its promise. Various critics along the way have even proposed the abolishment of the Air Force as a separate service.

I remember one article in the *Air Force Times* as recently as 1990 to that effect. Now, I think we must admit that the frequency of these proposals has dropped off in the last couple of years. I know you've all heard a lot about the Gulf War and so I won't talk about it a lot. But we have to keep in mind that it was a defining moment for airpower.

Let me quickly point out that I believe we must avoid the temptation to once again treat the present state of airpower as a finished work, a finished product. Airpower continues to develop, building on the enduring lessons of our more distant past, and certainly our recent experience in the Gulf.

This development is fueled by the creative energies of hundreds of dedicated airmen, and air-minded citizens, like those gathered here in this room today.

The present pace of development is rapid, proceeding in a very fertile environment that was created by the Chief and Secretary Rice. Their determination to keep our Air Force out in front during this period of dynamic change has been imaginative, courageous and valuable beyond measure.

From the beginning of airpower discussions, they have been shaped — or maybe plagued — by two fundamental controversies, one internal to the Air Force, and the other external. Both controversies can be described in terms of the relative priority of roles and missions. The internal controversy grew out of the natural competition for resources and attention by the emerging strategic, tactical, and airlift commands.

As World War II merged into the Cold War, interrupted by the Korean and Vietnam conflicts, the various Air Force commands grew or receded in importance and influence as the situation dictated. These organizations developed under the leadership of great men who did their best to deal with their responsibilities as they saw them.

Often the results were very parochial. But what resulted were highly specialized concepts and techniques of strategic warfare, air mobility, and tactical combat. And those techniques and concepts characterize our Air Force today. I think one can argue that the level of excellence that we enjoy today might not have been attained through any other organizational process.

My point here is that we must understand the evolutionary nature of these developments. In that regard, the snapshot that we see of our Air Force today should be viewed, as I said before, as another stage in that development.

In today's Air Force, we're growing another generation of airmen, a new generation. These airmen will be less encumbered by outmoded distinctions between operations and support, or between tactical and strategic. We will continue to specialize, and take advantage of the increased competence that comes with specialization. But those future bomber, fighter, tanker, and airlift folks will have a greater appreciation of the contribution of the other specialties, because of the way we're organized today. We're moving closer to becoming one Air Force. And we're doing it without losing the specialized competencies.

On the other hand, the external controversy centers on the questions of relationship to other services, as you know. Again, it springs from the relative priority

of roles and missions in the competition for resources and attention.

There have been many discussions, and not all of them congenial, over the relative value of defense dollars spent on carriers versus bombers, on air superiority versus close air support, on light forces or heavy forces, and so on.

In this area, the Gulf War was again a defining moment. Again, the value of centrally controlled airpower was highlighted. And this control allowed the remarkable versatility of airpower to be used across the entire theater of operations — versatility ranging, as you know, from strategic attack through close air support, tank plinking, Scud busting, and even oil valve closing.

Suddenly, because of that, we find growing support for the concept of centralized control of airpower under a Joint Force Air Component Commander, or JFACC. Obviously, this has been the Air Force position for the past 50 years.

On the other hand, we should remember that until recently, our air component commanders were almost exclusively oriented toward tactical fighter operations. Because of the way we had evolved, the commanders in chief of unified commands had to rely on liaison elements for Strategic Air Command, Military Airlift Command, and occasionally for other Air Force entities.

The Air Force proponency for a single air manager was substantially compromised by the way we were organized within the Air Force. Today I'm pleased to report that in my role as CINCUSAFE, I represent the entire spectrum of specialized Air Force capabilities in my discussions with General Shalikashvili, the Commander in Chief, European Command. I bring him strategic attack, air superiority, interdiction, close air support, electronic combat, air refueling, airlift, intelligence, and so on. And I believe that this relationship increases the likelihood that the CINC will use his airpower resources prudently and to good effect. An airman can ask no more.

Just as the whole idea of airpower has continued to evolve in an atmosphere of widely diverse opinion, so does the idea of joint operations. On the one extreme are those who would abolish the separate services in favor of some kind of super unified force. On the other hand there are some who would abolish the Joint Chiefs of Staff in favor of still greater autonomy for the services. And of course, both of these extremes are unsatisfactory.

Those who argue for further reduction in the separate identities and the influence of the services would equate jointness with military effectiveness. On that note, we should understand that jointness is a matter of military efficiency rather than military effectiveness. There is no substitute in war for an expert rifleman well trained, or a silent, stalking submarine, or a precision guided bomb on target.

But every time the discussion turns to our management of the taxpayer's defense dollars, many ask, why not do away with those expensive services? And these critics of the services fail to understand the tremendous value of specialized competence in modern warfare and the critical role of the services in developing that specialized competency.

Good reason tells us that joint operations can only succeed when they are founded on the well-developed, specialized competencies of the land, sea, and air forces. The services provide the fundamental military capabilities in the various mediums of warfare that are integrated during joint operations. The joint force, to say it another way, is only greater than the sum of its service parts if they are each powerful and competent in their own right.

But jointness is often a matter of perspective. Some Army officers see the epitome of jointness represented in the AirLand Battle. Some Naval officers might cite the support that they get from Air Force land-based tankers as the leading example of jointness. And some Air Force officers would tell you, probably, that to be an air liaison officer or forward air controller is as joint as life can get.

Those are all good examples of jointness, but today joint is much more. And over the years, the Joint Chiefs of Staff have developed the best measure of jointness that

I've been able to find. The JCS considers the joint force commander's perspective to be the most important in this regard. And throughout the contemporary JCS guidance, the joint force commander is empowered to organize and employ his various forces as he sees fit in order to best accomplish his objective.

I think that was the point of Admiral Miller's slide. You tailor the force. And you don't have parochial interests at the center of your tailoring. You ask rather, what's the objective? It's this objective orientation which anchors our contemporary understanding of joint operations.

We're learning what is important. And it's not the extent to which a particular service capability is utilized, nor the extent to which several kinds of forces are integrated. It's the objective that is important in determining which forces are employed, and in what particular combinations.

It's this "objective" orientation that is critical to the appropriate use of airpower in warfare. The joint application of airpower in the Gulf War is well documented and well accepted by most senior military leaders. We must carefully guard those lessons from the few who would pursue parochial interests. And that's always a challenge. But I'm optimistic that we have cleared the hurdle of justifying a single commander for air under the joint force commander.

I've talked about some of the controversies that surround airpower and the joint elements of using that airpower. Now let me talk for a minute about joint operations in planning and using airpower in Europe today. More specifically, let me stress that "joint" is only a part of the picture. "Combined" or "coalition" is the more prevalent condition, and probably will be for the future.

For example, in the immediate aftermath of Desert Storm, with only a phone call's worth of alerting notice, we entered a combined operation called Provide Comfort. You all know it well. We started with an airdrop operation by U.S., U.K., and French planes, under the protective cover of U.S. fighter forces. We had tankers from SAC, AWACs from TAC, airlift from MAC, and fighters from USAFE. And the whole composite wing structure was supported by the carrier air wing in the Mediterranean.

In time, the traditional fighter mission became less demanding due to Iraqi compliance with the original no-fly zone. The fighter forces shifted to searching for refugee sites, and led coalition transports to the drop zones. The air drops ended, but Provide Comfort still operates today as a combined operation, principally air, providing a deterrent to Iraqi attacks on their own people. And of course, Southern Watch does the same thing in southern Iraq.

Significantly, Provide Comfort once again validated the concept of centralized control of air. This time the focus was on the rotary wing assets of the various services. The issue here was a limited helicopter force to provide essential humanitarian relief to the camps in the mountains on the Turkish-Iraqi border. And these same assets were also needed to provide lift for coalition forces that were at risk in northern Iraq.

As usual, service component feelings ran high, as to who would control the resources, or who should control the resources. The decision once again belonged to the joint force commander, balancing the advice and capabilities of his air and land component commanders. And he made that decision with that advice.

Most recently, we have seen these forces involved in the enforcement of the northern no-fly zone in Iraq, and it's been very effective as you can read in the newspapers. So you can see the issue of joint, and perhaps more commonly seen combined, air operations is still with us. This issue surfaces in all types of contingencies, and I haven't even touched on the wide variety of NATO variations.

As I said earlier, a work in progress.

The American people have seen in the past two years a joint force commander use airpower strategically to attack the

enemy where he lives to diminish his capacity for war. They have seen airlift used for powerful humanitarian purposes, as well as for political purposes. And they have seen the traditional tactical roles again validated. They have seen convincing testimony on the importance of establishing a single commander for airpower employment. And they know that airpower can be used independently by the joint force commander if it fits his objective.

They know that there may be, in some instances, an alternative to costly attrition warfare characterized by lines on the ground and high body count. And these American people are not likely to stand by silently while some future commander contemplates the commitment of American troops in battle without demanding answers to questions like, "Have we dropped enough bombs?" and "Do we control the air?"

This new awareness of airpower in the public sector is both refreshing and satisfying to professional airmen everywhere. There's a virtual airpower renaissance going on inside your Air Force.

At this very moment in Europe, under the leadership of U.S. Air Force airmen, representatives of the other services and/or allies are refining concepts and procedures. And these refinements will guide the joint and combined employment of U.S. and allied airpower within a wide range of contingency operations.

Our young people are building on this new appreciation for airpower, moving forward unencumbered with the baggage and biases of the past — baggage and biases focused on tactical versus strategic versus airlift. They're building on a construct of Global Power, Global Reach.

And that's not just a jingoistic phrase. This has already been emphasized today. It's a useful construct to focus our discussions on the role of airpower in joint operations.

These evolutions continue. And we must continue building the world's most respected Air Force. It's our mission in the United States Air Force to specialize in control and exploitation of the aerospace medium, so that our nation can continue to field the world's most respected joint force anytime, anyplace, as required.

We thank you, Air Force Association, for your support and your involvement in this important work. Thank you very much.

Question & Answer Session

General Robert C. Oaks

GENERAL HATCH: We're all concerned with events in Bosnia-Herzegovina and the possibility of greater involvement by the US military. From your vantage point in Europe you get a good sense of the operations. Comment please on Air Force operations to date and the potential Air Force role in the future.

GENERAL OAKS: Well that's part of this work load I talked about. We are flying C-130s into Sarajevo today. We're getting shot at. We're getting hit. We've got people sitting on chains on their seats so that if they get hit they'll have some individual protection. We're laying flight vests along the side because it's war. We're logging combat missions, we're doing it at a heavy load, we're doing it superbly, and we're doing it in conjunction with the other forces. They're all flying in there.

I flew a mission in there a few weeks ago. We went in listening to a French GCA [ground controlled approach] controller who talked us in. When we first started flying these missions, they were considered a tactical set-up, for which we've got to use 800 and 2 for minimums [the base of clouds no lower than 800 feet with two miles lateral visibility for the GCA controller]. If you use 800 and 2 in Sarajevo in the winter, you don't go. So we lowered the minimums. We refined it. We listened to the GCA controllers closely. They are very good. These efforts are working very well and we're supporting them.

But it's war. Obviously we can't talk a lot about a lot of the planning that's going on. We're prohibited from putting people in except in those humanitarian roles. But there is a great deal of planning. People are looking at ways that we can bring airpower — notice I don't say tactical airpower — but airpower in its entirety to bear in that conflict.

The problems are horrendous and there is no easy solution. I think it's the most difficult political problem and the most difficult military problem facing the world today. But we are already working the problems and we're looking for options to support the United Nations, NATO and United States in their various but, I think, very much complementary goals to bring that conflict to a halt.

There are a lot of discussions going on about application of power. You can read about them in the newspapers. But in fact, we are applying airpower there today with our C-130's going into Sarajevo.

GENERAL HATCH: A related question, General Oaks. It refocuses attention on the southern region and Air Force proposals to open a base at Crotone [Italy] and other sites in that region. Is there any progress being made on that front?

GENERAL OAKS: Yes. We're working closely with the Italian government through EUCOM [United States European Command] to find a solution. As you know, Crotone was our proposal to find an alternative location in the southern region for the 401st Tactical Fighter Wing. General Galvin used to say that if he had one wing in Europe he would want it at Crotone.

Well, Crotone isn't going to happen. But there are other alternatives. We're working with the Italian government to find locations at an Italian air base or at other base locations in Italy that we can support and that are politically and militarily acceptable and desirable from their point of view.

It's a challenge. It goes back to that issue of declining resources because it costs money to do that. You get very high leverage because of the great benefits in representation, influence, and combat capability from a base in Italy. But we're going to have a very difficult time getting any military construction dollars to do it. Getting F-16s from the 401st into the southern region still remains a very high priority goal for EUCOM and certainly for USAFE too.

GENERAL HATCH: A second set of questions is on force structure and basing in Europe. We all know the importance of Turkish bases to Northern Iraq and many other factors to be considered. Yet forces in Europe are being withdrawn at a rapid pace. Force structure and basing are decreasing. How do you see your minimum requirements for basing in Europe?

GENERAL OAKS: We have some time ago passed through our minimum requirements. Now we are trying to maintain a balance of capability and a regional balance. That's been our driving goal. We have brought forces down wanting to keep a balance of air defense, dual-capable aircraft, attack aircraft, and close air support aircraft. As your force gets smaller and smaller, that balance becomes more and more difficult.

Then you're back to the regional balance. You want some forces in the UK, some in the central region in Germany, and, of course, we have Soesterberg in the Netherlands. We also have the force that we sought, as we talked about before, in the southern region. So we're trying to maintain that balance of capability and geographical separation. It's getting tougher and tougher, but that's our goal.

GENERAL HATCH: A related question: as a forward-based commander, how do you feel about rotational training and being able to accomplish it with forces rotated forward on a TDY [temporary duty] basis versus PCS [permanent change of station]?

GENERAL OAKS: Well, it's good to have some rotation. We've had it in the past and it's critical that we keep it in the future. Rotation is good. Rotation is terribly expensive, however. Forward-based forces only cost 10 percent more than those at stateside base locations, and that depends on the dollar exchange rate. So it isn't nearly as expensive as people talk about.

Then you talk about rotation. If I decide I'm going to have a squadron at Bittburg, I'm going to have to rotate it or I am going to PCS it. You pay about $28 million a year more for a rotation squadron at Bittburg than you do a PCS squadron located there. I won't track you through all the logic but we've done it and we've sent it to Senator Nunn [Sen Sam Nunn, D-Ga., Chairman of the Senate Armed Services Committee]. I'm confident about the logic and the math of it. It's much more expensive, once you decide we're going to put a squadron somewhere, to rotate squadrons, when you consider all the forces you have to have.

Track back to what [Gen.] Mike [Loh] said about workload. A major portion of that increased workload is those TDY rotations. Now you want to rotate more? Your workload goes way up and you can't do it. When I signed in to my first operational basic command, a long time ago, a fighter pilot was gone on TDY an average of a hundred and eighty days or more a year. They were getting out as fast as they could as soon as their commitment was up. Why? That is not a very nice lifestyle. That's what you're talking about when you talk about rotation, especially with this diminished force. The Guard and Reserve don't do that rotation at the same workload. They'll help out where they can and where you can afford, but finally it comes back to horrendous workload especially in the smaller force. It sounds good but it is a fallacious argument.

GENERAL HATCH: Thank you, General Oaks. A final question has to do with foreign military sales. Many of the industrial representatives are trying to market hardware overseas. Is there a role for industry and military forces in approaching foreign military sales?

GENERAL OAKS: Well, I think the military has always played a very important

role in marketing. How do we do it? We do it by showing excellence. We show the excellence of the product. The airplanes that we fly are always the envy of everyone around, and they see that. That's a great demonstration on a daily basis, and we operate with those folks all the time. We go down to the tactical leadership program at Florennes [Belgium]. Those people bring all their Air Force airplanes in there and they all fly with the F-16s and the F-15s and the F-4s, and they see up front, real close, the quality that's there. That's probably the best answer to that question: the daily demonstration of the equipment that the industry of America has provided to us over the years. We're enthusiastic. We like people to fly our airplanes. We're proud of them. We want to share them with our allies.

So just in the daily conversations that take place within the halls of NATO headquarters and the other organizations, I think there's a sales pitch going on. I know that if we asked the allied officers that are in here with us, they would say that there's a daily sales pitch going on. And that's why they fly our airplanes. We have been successful in that.

GENERAL HATCH: Your responsibilities are tremendous over in Europe these days and we are just as proud as we can be to have you here. You're a great supporter of the Air Force Association, Bob, and we look forward to seeing a lot more of you in the future. We thank you for being here today. Thank you very much.

GENERAL OAKS: My pleasure. Thank you very much.

General Ronald R. Fogleman

"Air Mobility ... The Key to Success in Joint Warfare"

Thank you very much, General Hatch. I thought I would talk today about air mobility in the context of the theme. I think that air mobility is a key to the success of any joint warfare operation.

About a year ago my current deputy, Lieutenant General Walt Kross, with a group of people from what was then SAC and MAC, was hard at work building a new command for the United States and the United States Air Force. He was the Commander of Air Mobility Command Provisional. On 1 June, when we stood that command up, he became the Vice Commander of Air Mobility Command. In its simplest form, this command took the bulk of the tanker forces that were released from their SIOP commitment and combined them with the strategic and tactical airlift assets that we had, to form this new command. Today, the air mobility capability of these combined elements, air refueling and airlift, has become a key ingredient in the success of joint warfare.

AMC is a major part of every ongoing military operation in the world today, and of every one planned for the future. I talk about things like Southern Watch, Restore Hope, our counter-narcotics operations in the South, and every major war plan we have. We see that, while we as a nation and as an Air Force continue to reduce our overseas presence and increasingly rely on this CONUS-based contingency force, the air mobility system becomes absolutely critical to every military and humanitarian operation that we wage around the world.

Air mobility provides Global Reach, and that brings a whole new perspective to planning and executing military operations. Allow me to briefly examine the origins of America's Global Reach capability and hopefully in part explain how we plan to meet America's need for air mobility today, as well as in future joint operations.

Fifty years ago, our nation's ability to project power on a global basis was tied to surface modes and to surface forces. As a nation at war, we were struggling with how to carry the war to our enemy's heartland and enemies, in a plural sense. The fact of the matter is, that what we lacked in capability, we made up for in things like ingenuity, courage, and blood, all at the expense of our soldiers, sailors, marines, and airmen. All too often, we asked too much because we lacked capability.

An example of this lack, and a way we overcame it, is the famous Doolittle raid. The anniversary will be coming up in April. Everybody remembers Jimmy Doolittle's early morning bomb run on Tokyo. It shook the Japanese confidence shortly after we entered World War II. It was not designed to be a decisive military operation, but to send a message, both to them and to our own people. In that joint operation, 16 B-25 bombers took off from the deck of the USS Hornet, 800 miles from their destination. They dropped their bombs, did some damage, then flew on toward China. Of course, they lacked the range, had no refueling capability, and would have had no way to meet the tankers had they had it. They were forced to either crash land, bail out, or seek sanctuary in the Soviet Union.

Those Doolittle raiders provided America with an important boost in morale; however, the combat power that was placed on target was negligible. It would take several more years for American forces to build a series of island-based airfields and

anchorages for the fleet across the Pacific before we could bring our bombers within reach of the enemy's homeland. Today, we could send that same message with a couple of tankers and some F-117s, put virtually no one in harm's way, and deliver a message that nobody would confuse. The island-hopping campaign to secure the airfields across the Pacific resulted in some of the most costly battles in America's history. On Iwo Jima alone, the Marines sustained nearly 20,000 casualties—20,000 casualties for one island. In total, America suffered over 150,000 casualties to reach its enemy across the Pacific. How different it would be today, both in terms of our Global Power and our Global Reach.

In Europe, the situation was a little better, primarily because England had survived to become an island fortress, providing us the infrastructure that was required to take that war to the heartland of Germany. Even there, demands were great. The distances, though not so vast, challenged the state of the art. Remember that, early in the war, fighters did not have the range to escort the bombers all the way to their targets. In those first months the bomber forces took as high as 30 percent casualties on mission after mission. Strategic bombing and airpower in general contributed greatly to the collapse of the Germans, by the spring of 1945. Building that capability to achieve significant results was slow and costly. 79,265 American airmen — airmen alone —died in the European theater of operations from 1942 to 1945.

Today, our bomber forces could penetrate those kinds of defenses and not take those kinds of losses. They could do it because the Global Power arm of our Air Force has built force packages that would allow them to do that. Our air superiority fighters have the range to go deep and do the mission. In the future, aircraft like the F-22 will continue to provide us that capability.

It is important that we not lose sight of the balance between Global Power and Global Reach. We have to have that balance. During the past 50 years, the need for Global Reach and Global Power has not diminished at all. In turn, our capability to project power has improved dramatically, and while we cannot go through a time warp, we have to remember that we do not want to ever, ever again be asked, or to ask our people, to do the kinds of things that we asked them to do during World War II. Technology has come forward; our capability has come forward, and we must be able to exploit both as we go into the future.

Now, back to the Global Reach story. Air transportation first came into its own during World War II. Nowhere was this any more evident than in the China-Burma-India theater of warfare. By May of 1942, the Japanese had cut the Burma Road. They had completely isolated American and Chinese forces. The predicament of these forces, with the Himalayas at their back and 1,000,000 Japanese forces before them in Southwest China, made it imperative that we reopen supply lines to General Chennault's Flying Tigers and the Chinese Army that was being supported by Vinegar Joe Stilwell. We had to do that by flying over the Himalayas. The hump airlift of World War II was created to sustain these forces, so that they could continue to tie up this 1,000,000-man Japanese army, so that it could not be shifted somewhere else in the empire.

In May of 1942, the first full month of aerial resupply to American troops in China, only 85 tons could be lifted by the C-47s and C-46s — 85 tons. That is less than four C-141 loads, one C-5 load, or one C-17 load. We improved this to 106 tons the next month, but it slipped back to 85 in July. The accident rate was even more dismal. We were losing two aircraft per 1,000 hours of flying time. Two per 1,000. The program initiating people into flying the hump was not a difficult one when it came to navigation. They were told to take off and follow the so-called aluminum trail that was left across the hump by crashed aircraft.

It really wasn't until Hap Arnold sent in the closest thing we had in those days to an airlift expert, a general by the name of Bill Tunner, that the situation improved. With the same mission objectives, under this

professional innovator, throughput over the hump increased to a high of 70,000 tons by July of 1945. These were spectacular results. The accident rate dropped from two aircraft lost per 1,000 flying hours to two lost per 10,000 flying hours. We would still not brag about that today, but in that day and age, that was a significant achievement under very difficult circumstances.

That capability to move men, material, and machines was not limited to war. While air mobility's value to joint operations may have first been realized in World War II, the same capability was called upon not long after the war, when the Berlin airlift was instituted to provide relief to that besieged city. In September of 1948, the Air Force Association's *Air Force Magazine*, in describing the Berlin aircraft, pointed out that, "For the first time in history, the United States is employing its Air Force as a diplomatic weapon." Recall the countless times that that has occurred since then, and think forward to the idea that this is going to be the weapon system of choice in the 1990's for our National Command Authorities.

The Berlin success was followed by the Korean experience. Later, a modernized jet-equipped airlift force did a magnificent job in Vietnam, both in its aerial resupply and with the true emergence of the C-130 as the airplane that became the workhorse, and remained so, of our Air Force today. Additional joint operations followed in Grenada and in Panama. The greatest test of airlift and tanker forces in the history of aviation occurred in Desert Shield and Desert Storm. That story has been told before in this forum, so I will not repeat it, but what is of note is that the desert experience was the last time that our tanker and airlift forces were to be employed in a Cold War configuration. In August of 1990, President Bush announced the new national military strategy: forward presence to replace forward bases. We would now have a CONUS-based contingency force, totally dependent upon deployment to protect US national interests, respond to contingencies, or provide humanitarian relief.

While there is a policy review underway by the new administration, if we go back and look at what President Clinton had to say during his campaign, it appears very much as though the current administration will continue to support such a military strategy. This is a strategy that is dependent upon Global Reach. It has thrust the Air Mobility Command into the forefront of joint warfare planning and execution. Every regional commander-in-chief depends on AMC's air mobility assets to provide the entree for their supported forces, whether engaged in contingency operations, such as Southern Watch, Restore Hope, or counter-narcotics operations in Southern Command, or even domestic relief efforts like Hurricane Andrew or Iniki.

I would tell you that as the Commander-in-Chief of the United States Transportation Command, some mornings, as I get up and look at the tasking orders, I wonder whether we have the wrong title. It appears to me as though we are very rapidly becoming the "United Nations" Transportation Command. In Restore Hope alone, we have transported troops and material from 10 different nations to Somalia, and the tasking continues today. We are engaged in a sortie effort of 15 C-5s to move Nigerians into Somalia, all part of the scheme to transition from a US presence to a UN presence.

AMC is part of a larger defense transportation system that has four pillars: strategic sealift, strategic airlift, surface transportation, and pre-positioned forces. Those pillars, the entire transportation system, are built on something called the en-route support structure, which starts with our CONUS bases, goes to our aerial and sea ports, and continues right to those places where we do not have a peacetime presence.

I would like to very briefly talk about how Restore Hope took advantage of all of these strategic assets, and to show you how the new configuration of air mobility forces played a very big role in this successful combination.

When General Joe Hoar had to come up with a concept plan to execute the UN request for help, we discussed what we had available and where we were going. I

had just been to Somalia, and he had been there not too long before. We understood clearly that it was a country with absolutely no infrastructure. We knew that we were going to have to go in and open air and sea ports, before we could even start to flow our forces into there. Yet, we were faced with a time crunch, because we knew that the President was going to make an announcement on Friday, and the rumor was that we were going to have to have forces in the country by Sunday. I requested that we have at least two more days, so that we could put down our en route structure, and General Hoar worked hard to get us that breathing room. In the meantime, we started looking out there at this concept, and here was the scheme that was to unfold.

First of all, we had a Marine amphibious group that was afloat, always out in that part of the world to respond to contingencies. It had been moved down off the coast of Mogadishu — 1,500 Marines. Their function was to go in and secure the airfield and the port, so that we could then come in and build the infrastructure to bring in the follow-on forces. The issue of who the follow-on forces would be was very important to us. We have to have force lists before we can build time-phased deployment plans. So the decision was made that initially we would use the Marines, out of El Toro and Pendleton, because one of the elements of our system is the maritime pre-positioning ships that were on station off Diego Garcia. We knew we were going to have to take 15,000 Marines into the area. The second force that was identified was the 10th Mountain Division, because it was an Army light division, and in theory could be transported relatively rapidly. It would come in after the bulk of the Marines were there. It would become the sustaining force, if you will.

Once the force lists were developed, then the timing and the sequence of transportation assets became important. The Marine amphibious group was to go ashore. Those 1,500 Marines are not designed to sustain themselves ashore very long. Amphibious operations, by their nature, are raids. You go in; you can hold for a very short period of time, and you have to have sustainment from somewhere else. That was their job.

We started moving the maritime pre-positioning ships down out of Diego Garcia before we ever got the word to go, because we had to have those ships down there. On those ships is the equipment and the supplies to sustain 15,000 Marines for about 20 to 30 days. What that meant is . . . when those ships arrived at a port that had no infrastructure, we had to very carefully time the arrival of the troops, because if the ships got there too soon, there would be no one to unload them, and there would be no place to muster equipment. If the troops got there before the ships, there would be no food or support for the troops. So timing became critical. The idea was to marry up the Marines with the MPS.

The very day that we got the go order, we activated the first two of our fast sealift ships, moved them out of port, and started to pre-position them so that they could start picking up the 10th Mountain Division's equipment that would go by fast sealift. A fast sealift ship takes 13 to 15 days to go from the Atlantic Coast to Mogadishu. So what we had was this period of time in which we would be closing the Marines while we were moving the Army stuff. Then we would start picking up the Army troops out of Griffiss — out of Fort Drum — and we would close them on the fast sealift ships. At this time we would be at about the 25 to 30 day point. Airlift was expected to sustain the force for the first 32 days, and then the cut-over would go to sealift. So what you saw was this combination of forces, but from the air mobility side, what became critical was that we had one airfield to flow this force through. Eventually we opened a second airfield, and it lasted for less than a week when it broke up. The lesson: the Russians didn't build very good airfields.

Then we really dropped back to where we were operating through one and a half airfields, but when we looked at the lay-down, one of the things that became obvi-

ous to us was that we could not have our airlift forces spread out all over Northern Europe and all through the Middle East. We were going to have to have two staging bases that would optimize the throughput through Mogadishu. It is as far from Cairo West to Mogadishu as it is from San Francisco or L.A. to New York, but the challenge was that when you got to Mogadishu, there was no fuel. You had to have a way to go into there and drop things off, and then we had to have a scheme to pick people up and go out to an en route refueling base, then back to a staging base.

In order to prevent a big flow through Europe, we ended up setting up a tanker bridge. So, we were bringing troops nonstop out of March and Griffis Air Force Base, air refueling our airlift, and taking them right to Cairo West, Egypt, and Taif, Saudi Arabia. We would swap crews, and pony express aircraft would flow into Mogadishu; unload; flow out of Mogadishu; land at a place like Addis Ababa, Djibouti, or wherever, and then flow back into the stage. New crews pick it up; we air refuel it, and we bring it directly home. Timing was critical. We had to have control of the thing. It required a new means of operation, and that's the way we inter-played in this thing.

Now, this was not a big operation in comparison to Desert Shield, but I have to tell you, I am very proud of what we did. If you looked at Desert Shield, and you took an average of all the airflow that went into there, we averaged 15 million ton miles per day of cargo going into Saudi Arabia during Desert Shield. Now, as soon as you talk about million ton miles, half your eyes glaze over, and you say, "What is a million ton miles?" It is pretty simple, really. The way you compute it, a C-141 carries about 20 tons, and if it carries 20 tons one mile, that's 20 ton-miles. If it carries it, as in the case of going to Somalia, 10,000 miles, that is 200,000 ton-miles. So, that is a measure of merit we use. The average was 15 million ton-miles — 15 to 17 million ton miles a day in Saudi Arabia, after we had activated the Guard and Reserve; after we had called up the CRAF, and using anywhere between 5 and 10 highly developed airfields.

During the critical seven-day period of the buildup in Somalia, operating out of one and a half airfields, we averaged 9.5 to 10 million ton-miles per day with the time and the flow through there. It was a magnificent effort by the people who know what they are doing in this lay-down business, and I am proud of them. It proved a new concept. It was not a big deal, but I think it was pretty well executed. It was not perfect, but it was well executed. Now, we are in the process of collecting the lessons learned from this operation, and we will be publishing them in a blueprint in the future. In the near term, we have a "hot wash" scheduled on Monday at Scott. We are going to start looking at things.

I would tell you a preliminary survey tells us the following: Our active C-130 force is undersized, and it is in great demand. Our strategic airlift fleet is tired. Our tanker force is more of a force multiplier than we ever realized. We are highly dependent on National Guard and Air Force Reserve volunteers, as well as commercial lift, even in a non-mobilized scenario like we just executed. Finally, we're taking a new look at our en route structure and our contingency lay-down forces, because we have to do business in a different way. Overlying this whole thing is the idea that the restructure that we went through makes a lot of sense, and particularly the formation of a thing called the Tanker-Airlift Control Center, the TACC, gives us the visibility to be able to execute this on a worldwide basis: the way it ought to be done.

We also clearly revalidated the utility and the need for the C-17. The C-17 will give us more capability to support CINCs anywhere in the world. As you know, it has the outsized cargo capacity of the C-5. It carries roughly twice the payload of the C-141 and does it with fewer crew members. Most importantly, it has the agility to operate on smaller ramps and smaller airfields. We need this aircraft for future Global Reach.

By the way, we've decided that we're

going to call the C-17 the Globemaster III. That is "3" with Roman numerals. We are going to do that to preserve a tradition that has been established by two airlifters that played key roles in the past. The C-74 Globemaster was able to circle the globe with only two refueling stops. The C-124, the Globemaster II, which was a modification of the C-74, had even greater range, and, for the first time in any of our aircraft, had the ability to carry the Army's outsized cargo. It was the only airplane that could do that until the C-5 came along.

Now, the C-17 Globemaster III can circumnavigate the globe with air refueling, and can carry outsized cargo all the way to forward deployed locations. Talking about range and payload, I think any of you who were here yesterday heard General Jaquish in his talk mention the fact that last weekend, the P-1 aircraft completed a 2,750 mile nonstop, non-refueled west to east leg, and a 2,500-plus mile east to west leg with a 160,000 pound payload — actually a little more than 160,000 pounds. While this flight was not really designed to meet the contractual specifications of range and payload, I think it clearly demonstrated great capability and operational utility. It should dispel many of the myths about the operational utility of the airplane.

Well, the Chief has designated this year as the year of equipage — organize, train, and equip. Air Mobility Command is in the process of building an air mobility road map, which will guarantee our nation the capability it needs to pursue a national military strategy built on Global Reach. As the details of that plan unfold, I look forward to sharing them with you. In the Chief's lexicon, we'll consider this as work in progress — more information to be provided later.

I think I'll stop here and take some questions, General Hatch.

Question & Answer Session

General Ronald R. Fogleman

GENERAL HATCH: Thank you, Ron. It's really interesting to have your perspective. As you might imagine, there are a number of questions. The first one has to do with the requirement for the C-17. It's a new administration, revised budgets ahead. How do you size up the program support, both on the Hill and with the new administration?

GENERAL FOGLEMAN: Well, I think some of that is yet to be seen, but certainly if you go back and you look at the public statements made, not only by the President, in which he clearly said that he was going to support the requirement for airlift and sealift, in fact specifically talking about the C-17, we anticipate that we will have support.

We are not going to make the mistake and assume that we will have support. We are actively engaged in building a program where we can talk to some of the members of the Congress, particularly the key committee members before we get into the congressional testimony season, and really sort of gauge the level of support. Those of us who have had the opportunity to see the general guidelines that came with the fiscal guidance that came down on Monday clearly see a statement in there that says the services will continue to press forward with the programs that support the requirements of the mobility requirements study. Imbedded in that study was the requirement for 120 C-17s and for our sealift surge capability that we are embarked on with the Navy.

GENERAL HATCH: Thank you, General Fogleman. I'll combine two or three questions, but they all relate to the C-141 fleet and the service life extension program efforts. Could you put that in perspective for us, please, sir?

GENERAL FOGLEMAN: Well, since taking command and having the opportunity to review the condition of the fleet in detail, I have maintained a position that says we absolutely need to know the answer to the question: Can we economically and feasibly do a C-141 service life extension? Let's face it. You can do a service life extension program for anything if you are willing to spend enough money. The question becomes, what are the tradeoffs? I have maintained that I supported the effort that is ongoing. In fact, because of the legislative hooks, we have the Scientific Advisory Board already looking into it — they've been to Warner Robbins. I was there yesterday. I talked to the program manager and got a little feedback on that visit. Quite frankly, I am very pleased with the direction that the Scientific Advisory Board has taken, in terms of looking at feasibility of a SLEP.

There is a problem, though, and the problem is that the time line that it is going to take for us to do a deliberate analysis is going to exceed the required report dates that we have from the Congress. Somebody is going to have to address that, and that is something that the Secretariat and the folks in the Air Staff are going to have to struggle with. The fact of the matter is that we need to know whether we can extend the service life of the C-141.

You know, there is a popular misconception out there. We do not have very many C-141's that have a 45,000 hour service life today. We have very, very few C-141's that have a 45,000 hour service life. We are in the process of a series of

modifications that have been ongoing for 10 years plus that gets the C-141 to 45,000 hours. This is kind of a rolling analysis that has to be done. There are some key things, like center boxes for wings, of which we have only purchased 118. These things have long lead times.

So there are some decisions that have been made in the past in anticipation of retirement and down-scoping of the C-141 program, that if the C-17 continues to slip, we need to step up to in a big way in the near term.

We allowed this country's airlift force to die on the vine once before, in the 1950's, when we started to focus heavily in the strategic area. We cannot allow that to happen again this year, so we need to articulate the true situation in this area. The Chief is very much aware and concerned. In fact, he has scheduled a C-141 summit that General Yates and I will be attending, where we will be talking about how our two commands are working to try to improve the health of the force.

GENERAL HATCH: Thank you, General Fogleman. The third question is CRAF. The Civil Reserve Air Fleet is a great success in supplementing our capability in Desert Shield and Desert Storm. What kind of planning are you doing with the airlines for the future?

GENERAL FOGLEMAN: Well, I invited the executives of the various CRAF participating airlines and others to come out to Scott. We spent an entire day reviewing the CRAF program. I have said before that General H.T. Johnson did many things to help ease me into this job. Probably one of the most significant that he has done in the context of CRAF was that on the day of our change of command, he issued a white paper, and sent it to the CRAF participants, as well as other people in OSD and JCS. It was our proposal on ways to improve the CRAF program. The CRAF program worked very, very well, but the airlines saw that it had some disadvantages. Because it had never before been activated, they really were not aware of these disadvantages.

An example: cargo carriers give their cargo aircraft to the CRAF program. Foreign airlines come in and pick up their market share. Foreign airlines are not dumb. When they go to the manufacturer that needs this air cargo lift, right now, instead of signing a one-year contract, these guys insist on a multi-year contract. So not only does that American airline industry participant lose in the near term, but gets frozen out in a longer term in market share.

There were many of these kinds of things that came up. As a result, the airline industry is not nearly as keen on getting back into this business. The key motivator that we have had in the past to keep them interested was peacetime DOD business. We awarded our peacetime business in return for their commitment. But they look out there, and they see our peacetime business decreasing because our forces are coming down overseas; our forces are getting smaller in general. They do not see that the future is going to hold much of a reward for them, and at the same time, they are at great risk from a business-based standpoint. So what we have tried to do is go in and look at the things that it would take to incentivize them to stay in the business. What are the things that we have been doing that disincentivize them to get in the business? Maybe we can do away with those things. What are some of the non-traditional things that would attract them?

We get answers like this. Some of the airlines would like to have access to military bases, not on a joint use basis, but in return for CRAF participation. They would be able to use our bases on a limited basis. Insurance and indemnification are a big, big problem for the airlines. We got some legislation changed after Desert Shield/ Desert Storm. One of the things they brought up last week is that maybe we did not go far enough, but I would tell you, that is a great step forward. So a lot of things like that are happening.

GENERAL HATCH: Thank you, General Fogleman. The next question has to do with our tanker fleet. Can you tell us a little bit about your plans for re-engining and multi-point refueling systems in the future?

GENERAL FOGLEMAN: Well, we are hopeful that we will complete our re-engining program for the tanker fleet within the next year or so. Really, the aircraft that we have remaining in the active force that we need to re-engine are basically our "Q" models. They belong to Mike Loh right now, because they're tied up in support of the U-2 program.

Concerning the plans for re-engining the Guard and Reserves, particularly as we look at the KC-135Es, in my view I am not sure that there is a big requirement for that, particularly as we go into the fiscal environment. Quite frankly, I can tell you that if it is — there are higher priority requirements for MOD money than to re-engine the KC-135E. I am a realist. I may get in trouble for saying this. The fact of the matter is, I suspect we are going to get issued that re-engining whether we ask for it or not. I am not programming that way. I am not planning on it. Fact of the matter is, I suspect that we will get issued that by the Congress. I am hoping that the dollars do not end up competing with other higher requirement modifications.

GENERAL HATCH: Thank you, General Fogleman. The next question has to do with the operational lessons learned with those difficult missions in Sarajevo. Could you address that, please?

GENERAL FOGLEMAN: Well, I think that the biggest operational lesson that we learned there is that we have been remiss in not getting self-protective systems on more of our aircraft. Right now we have about 30 C-130s — I take that back, because we have just modified some in Europe — so we have about 36 C-130s that have a self-defense system on them, that have the capability to pick up IR-fired missiles and provide a means of defense. The bulk of those aircraft are in the Guard and the Reserve. Today, we only have two C-5s with this kind of equipment, and less than 10 C-141s. Now, these are the kinds of areas that we need to start spending some money in, because these aircraft are going to be going into harm's way, day in and day out around the world during the 1990s.

One of our big limitations, General Hatch, has really been the need for self-protection as we go in there. The rest of the operation is no more challenging in terms of runway operation, approach corridors and things, than it is anywhere else, but that is our primary concern.

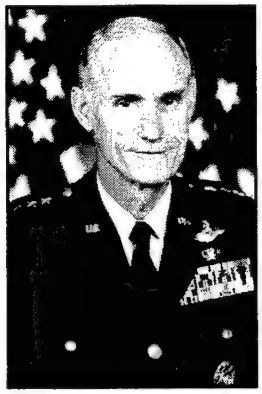
GENERAL HATCH: Thank you. Final question: You mentioned your work on the air mobility road map. When do you expect to complete this work?

GENERAL FOGLEMAN: Well, the Chief wants it by 1 October, and I would like to have it complete by mid-August. What I would like to do is complete that, and then my plan is to convene some senior statesmen who have been in this business, come in and ask them, in conjunction with the staff, to sit down and review it. The really no-kidding, drop dead date is 1 October. The staff has promised me 15 August, and I anticipate 15 August.

GENERAL HATCH: Thank you very much, General Fogleman, for the excellent address. We appreciate all that you do.

General Merrill A. McPeak

"Training & Equipping the Air Force"



Good morning. I appreciate the work Mike Loh, the ACC staff, and the Air Force Association invest in this event. It's a great opportunity to talk about air and space power, to think about the future. I'll say something about my views on the future Air Force in just a moment.

Much has changed since last year's Air Warfare Symposium. Last June, we set out an Air Force mission statement, to defend the United States through control and exploitation of air and space. We're getting a lot of opportunities to execute the mission. The U.S. military is engaged in three regional contingencies right now: Iraq, the former Yugoslavia, and Somalia. The Air Force has a large role in these contingencies. In Iraq, we shot down two MiGs last month, the first combat kills for the AMRAAM. We also provided most of the forces for the strikes on air defense sites in the northern and southern no-fly zones. In Northern Iraq, in Operation Provide Comfort to protect the Kurds, we flew 37 operational sorties yesterday, bringing our total in the north to about 47,000, including support sorties. In the south, in Operation Southern Watch, we flew 120 operational sorties yesterday. Our total for Southern Watch is just over 13,000, with about 7600 fighter sorties — two-thirds of the Navy-Air Force joint total. We've also put over 130 U-2 flights across Iraq to monitor the military situation. All told, we've flown over 139,000 sorties since Desert Storm to support operations in Iraq — no misprint, 139,000. That compares to the 80,000 we flew in the war.

In the former Yugoslavia, we flew eight relief flights yesterday, bringing our total to 690. In Somalia, we flew four relief sorties yesterday. We've flown a total of over 1800 relief flights there, plus another 2000 airbridge sorties to support the overall operation. Incidentally, several of the other countries involved in the relief effort called on us to provide the airlift for them, demonstrating once again that we are the Air Force of first and last resort.

Elsewhere in the world, your Air Force continues to be quite busy. Over 400 Air Force personnel are deployed to support the counter-drug effort. We're flying just over one AWACS sortie a day in the drug war. We've launched two satellites in the last month; we have over 40 in orbit. The last shuttle mission carried the first military woman to fly in space, an Air Force Academy graduate, Major Sue Helms. We have a Red Flag exercise under way at Nellis Air Force Base and a joint Air Warrior exercise with the Army in progress in California. Squadrons are deployed to Egypt and Thailand to train for regional missions.

So, we're busy. Our national leadership finds plenty of opportunities to use airpower's flexibility. One group in particular deserves special recognition. The success of almost every contingency hinges on effective theater airlift. In particular, active and Reserve Component C-130 crews have played a pivotal role in the Persian Gulf, Somalia and in the former Yugoslavia. They have done so at no small risk to themselves and their aircraft. Their families pay the price of long separations. We are looking for a way to give these crews the recognition they deserve — more on that at a later date. In the meantime, my hat is off to the C-130 force.

All of these contingencies, all of this activity, is performance of our mission of

control and exploitation of air and space. I wish I could be out there on the working end of it. But, unhappily, my job now is to sit in a one-G office, trying to make sure we're organized, trained, and equipped to execute the mission. In 1991, we focused on organization. As a result, Air Combat Command, Air Mobility Command, and Air Force Materiel Command are now up and flying — people are getting used to saying "AMC and ACC" instead of "MAC and TAC." Our Numbered Air Forces are reconfigured as operational echelons. The air divisions are gone. Our wings are renamed and are into the objective structure. We continue to fine tune. For example, 20th Air Force, the ICBM force, will transfer from ACC to Air Force Space Command this summer. This adjustment puts the missiles under the commander whose core responsibilities include launch expertise. And it relieves the ACC commander of a mission that took a lot of time but didn't fit well with the rest of his work.

Space Command may also pick up broader responsibilities if the Air Force consolidates space functions under the current roles and missions review. In any case, we will continue to tweak the reorganization. This, like any other Air Force activity, is a process of continuous incremental improvement. We are always looking for ways to get better, to move closer to our target of building the world's most respected air and space force, a Quality Air Force.

Last year at this symposium, I announced that 1992 was the Year of Training. Its basic objectives were to define an overarching concept for training, including an appropriate organizational structure, and to raise standards. Like the Year of Organization before it, the Year of Training has produced changes that will take years to implement and refine. Let me mention some of the more significant outcomes.

First, training structure. When we reorganized the Air Force in 1991, we left out the training piece. We did so because we knew we would circle back during the Year of Training and examine our training structure. By last September, we knew we would be growing the responsibilities of Air Training Command. Therefore, we announced that ATC would become a four-star billet. General [Henry] "Butch" Viccellio, who will speak shortly, is now in place there. This summer, ATC will become the Air Education and Training Command. Air University will be part of this new command. Also by this summer, combat crew training for major weapons systems will transfer to ETC. Let me discuss each of these changes in turn.

Putting Air University under ETC will improve our organization in two ways. First, it will continue the move towards fewer major commands. We started with thirteen; last year we cut to ten. Merging ATC and AU into ETC will put us at nine. The people and dollars formerly eaten up in MAJCOM overhead are now being put against training and operating our Air Force.

The second advantage to ETC is that it gives us one commander responsible for the entire education and training effort. Education and training are not identical functions. In a sense, education teaches people how to <u>think</u>, while training teaches people how to <u>do</u>. Air Force people must be well-educated <u>and</u> well-trained. The Quality Air Force pushes power down in the organization, and our people must be able to <u>think</u> and <u>do</u> in order to improve our operations.

But education and training are close enough that one individual should be in charge of both, to make resource tradeoffs when necessary, and to make sure training and education complement each other. And all of our education and training institutions will benefit by having a four-star advocate for their resource needs.

By the way, we gave careful consideration to the name of the new organization. In calling it Air Education and Training Command, education comes first, not because it is more important, but because we wanted it understood that we were <u>not</u> subordinating education to training.

So, the first major change in the training organization is that Air University will

report to the new ETC, a four-star command. The second big change is the transfer of major weapons system crew training to ETC. Those who studied the restructure know that many of the changes were, in fact, a return to old ways of doing business, a "back to the future" approach. Such is the case with combat crew training. ATC conducted crew training until the early 1960's. Why is this old idea a good one for the future?

ETC's basic business will be individual education and skills training. The operative word there is "individual." Combat Crew Training, now handled by ACC and AMC, is also a process of training individuals in particular weapons systems. But the basic business of the combat commands is combat. We don't fight as individuals — we fight as units. The peacetime focus of our combat commands should be on unit training, or exercising. So, here, I draw a distinction between individual training — activities like checking out in an airplane, transition, formation, instruments, BFM, weapons qualification, et cetera — and unit preparation for combat, or exercising — activities like unit mobility exercises, flag exercises, ORIs, and so on. Of course, individual training is also done in units — we call it continuation training, sharpening the skills first learned in combat crew training. But, the core business of our combat commands is deployment and employment, and they must be very good at it. Shedding their schoolhouses will permit the combat commands to concentrate on these tasks.

To implement this change, on July 1 of this year, crew training for F-15's, F-16's, C-5's, C-141's, KC-135's, ICBM's, and the rescue and special operations systems will move to ETC. Luke, Tyndall, and Altus will become ETC bases. A-10, OA-10, C-12, C-21, and C-130 training will also transfer to ETC at some point in the not-too-distant future. These systems account for 78 percent of the student load and 84 percent of the cost of aircrew training, so the bulk of the crew training task will belong to ETC. Training for some small systems, such as the F-117 and F-111, will remain with the combat commands. The scale of these training operations makes it impractical to move them to ETC.

To make sure ETC crew training provides a quality product, the combat commands will retain a controlling interest in syllabus development. We will make sure the training program is responsive to the needs of the gaining commands. Further, the change will yield other benefits. We'll see a productive crossflow of personnel and ideas between the combat commands and ETC.

To perform its functions, ETC will have four sub-components. Two components will be numbered air forces, so ETC will have a structure comparable to the combat commands. A numbered Air Force headquarters at Keesler will oversee technical training — we'll determine the designation at a later date. Nineteenth Air Force, headquartered at Randolph, will oversee flying training, from undergraduate pilot and navigator training through crew training. The other two ETC components will be Air University and the Wilford Hall complex. Air University will run Professional Military Education, Professional Continuing Education, the Community College of the Air Force, and graduate education, as it does now. It will also take responsibility for two pre-commissioning programs, the Officer Training Squadron and ROTC. We are still examing how the Air Force Academy best fits into our overall education and training architecture.

Not all the Year of Training initiatives are organizational. We are also raising standards. Last September at the AFA Convention in Washington, I described the improvements we are making in enlisted training. All career fields will begin with a technical training school. Upgrading from the 3-level apprentice to the 5-level journeyman will require more experience, and upgrading to the 7-level craftsman will require a second trip back to formal tech school training. Requirements will be standardized across all career fields. These changes will give us a more seasoned, better trained enlisted corps.

In parallel with skill training

improvements, enlisted professional education will also become more rigorous and will be conducted entirely at residence schools, rather than by correspondence. Quality PME is essential because it teaches the managerial and leadership skills needed to progress in rank and responsibility. In combination, the new skill training requirements and PME improvements will provide a rigorous, structured career progression, standardized across all fields, for the 80 plus percent of the active Air Force who wear enlisted stripes.

Taken together, all these changes will produce the well-educated and trained personnel who will be needed in the 21st century Air Force. In short, we intend to set the world standard for training. When someone hears that Captain Smith or Sergeant Jones is Air Force trained, they'll pay attention.

If we've already looked hard at Air Force organization and training, you know what's coming next. 1993 will be the Year of Equipping the Air Force. It's still early in 1993, so we are just starting to define what it all means. Let me share what I know so far.

First, any changes that come out of the Year of Equipping are likely to be less sweeping than the changes we've made in organization and training. This is not an attempt to downplay expectations. It's simply a fact that we have less flexibility in the acquisition field than we do in the other two functions. As you know, acquisition gets a great deal of attention from senior Department of Defense leadership and from the Congress. That attention produces detailed guidance. So any changes we suggest must fit within the many laws and regulations governing the equipping of our forces.

Moreover, recall that we stood up AFMC last June, combining the field command responsibilities for equipment acquisition and logistics. In addition, as part of the headquarters restructure, the requirements function was moved into the Air Staff, under the XO, and a Test and Evaluation Directorate was established, reporting to me. In combination, these were the principal organizational changes needed, in my view.

However, I believe there are many actions we can take to further improve our equipping activity. I see two major areas of concern: time and cost. It takes fifteen to twenty years to field new major weapons systems. The most important technology in many of these new weapons is information processing, and this technology is turning over maybe every two years. We need both to shorten our acquisition cycle, and do a better job of making provisions to accommodate the inevitable technological improvements that appear during system development.

The second area of concern is cost. It's no secret that shrinking budgets will not permit the scale of modernization we enjoyed in the eighties. That's o.k. — we don't need the same level of modernization. My concern is that current cost trends may prevent any serious modernization whatsoever. If you think I'm overstating the case, try figuring out how many F-22's and C-17's will fit into a $200 billion defense budget. We don't know where the resource floor will be — maybe lower, maybe higher than that — but we do know that cost is bound to be an increasingly important parameter.

To help us get started dealing with these issues, I will shortly task the operating commands to prepare modernization plans for the next twenty years. These plans will define equipment requirements and lay out projected funding and timelines. Obviously, no twenty-year plan in Washington is carved in granite. But we need to take a longer view in our planning so that equipping the force for the next century will be affordable.

During the Year of Equipping the Air Force, we will also seek to align requirements, technology, and the threat. This is something we do every year as we develop the budget. We canceled or sharply downsized lots of strategic programs — Peacekeeper Rail Garrison, SRAM II, the advanced cruise missile, the B-2 — but we have not so far done a zero-based review of conventional systems to make sure we will field the relevant capabilities in the new operating environment. We need to

make sure we have a process in place to adjust the threat-technology-requirements profile effectively over time.

Finally, we need to make sure our acquisition and support infrastructure are right for the times. Is our acquisition training in good shape? Do our labs and depots meet our needs? What investments need to be made, when, to give us the proper test and evaluation capability? Tough questions — we need to get started now.

That's a comprehensive look at the Years of Organization, Training, and Equipping, as they stand today. I guess my message is simple. If you thought this was a slack time for the Air Force, look again around the world, at the regions where we're working today. If you thought we'd made all the changes we're going to make, think again. We've come a long way, I'm proud to say, but we've still got a ways to go. But if you think we're going to be the best Air Force in the world, one that is always ready to defend this country, then you're right on the money. Again, many thanks to AFA and ACC for making this symposium possible.

Question & Answer Session

General Merrill A. McPeak

GENERAL HATCH: Thank you very much, Chief. We all understand that we have a new administration, and reduced budgets are around the corner. Could you discuss the process and time frame that you're looking at with the new administration in the new round of budget efforts?

GENERAL McPEAK: This week we are doing a budget adjustment to the FY [fiscal year] 1994 budget. As you recall, the last administration sent up an abbreviated budget in January. The new administration wants to rework and resubmit those numbers. So we've been given a target number to try to squeeze almost $3 billion out of the Air Force budget in FY '94.

And we're doing our best with that, but it is fair to say, I think, that we're doing that work rather quickly. In terms of the suspenses and the time lines that we're working on, we had to do an effort that was characterized by abbreviated analysis.

Later this year, we will, with the new Secretary of Defense, work our way through the program period adjustments with a view to reducing the defense budget some more. And during that period, I think we will have a chance for more thoughtful reflection. We'll be able to do a more bottoms-up kind of an analysis, a strategy-to-task approach. What is it that we're trying to do in the world? What do those objectives translate into in terms of tasks for the armed forces? What is needed in terms of people, base infrastructure, equipment, and so on to accomplish those tasks?

That more thoughtful, detailed analysis will be a considerable piece of work for us to accomplish in the spring and early summer.

So I would say we are involved in a two-phased kind of activity, one very short-phased to adjust the '94 budget, and then a longer, more substantial effort where we look across the board at the rest of the programming period. I think during that time we are likely to revisit some very fundamental questions.

You have to remember that we — the Air Force, at least — are now in the eighth year of a dramatic budget drawdown. Our dollars that we have available to spend hit a peak in 1985 in real terms. The budget is down about 44 percent from 1985. We have ground away at this process for several years, and now we're going to take another big cut. It's not likely that we will be able to take such cuts without weakening in substantial ways our defense posture, unless we really do begin to look at fundamental questions.

So what I see happening is another round of roles and missions reviews, which will take place this spring and early summer. We'll try to see if there isn't some needless duplication or overlap that we can squeeze out to achieve these savings in ways that leave us with a very strong national defense.

GENERAL HATCH: Thank you for that perspective, General McPeak. The second question refers to the recently released edition of "Global Reach, Global Power," and the reference in that document to the future assignment of bomber forces to the Guard and Reserve. Can you comment on Air Force plans, please, sir?

GENERAL McPEAK: I'm not sure that I can comment on specifics. But we do intend to put bomber forces into the Guard and Reserve. We'll be making an

announcement shortly. My only reluctance today is that I don't think we've made public yet where we're going to do that. But we will be putting both B-1s and B-52s into the Guard and Reserve.

It's logical that we should do this. We now visualize these systems as long-range fighters. I mean, the B-1 is essentially a long range F-16 — a conventional warfighting system, an excellent system. We need to give it much better support than we've been able to rally for it in recent years. But it is a winning system, a sunrise kind of system, capable of doing very good work for us in conventional air operations.

So we have broken lock on the idea that this is a nuclear system. Therefore it fits much more readily into the Reserve Component. Absent the question of nuclear use, there's no reason why it shouldn't be in the Reserve Component. Also, it's nice to have a system like that operating at some reduced operational tempo, as Guard and Reserve units do, and available for instant surge to add to our capability in time of emergency.

So it's a perfect kind of system to put in the Guard and Reserve. We will move forward on that and be making some announcements shortly.

GENERAL HATCH: Thank you, Chief. For unforeseen operations like Restore Hope and Operation Provide Comfort, where does the money come from to pay for them?

GENERAL McPEAK: What a good question that is. A lot of it comes right out of Air Force O&M [operations and maintenance funds], so it is funded by the services as part of their normal activity. We have been able to get some recognition for some of it, and there may be some supplemental funding that will come from Congress. For some of our operations in the Persian Gulf, we got substantial funding from our coalition partners.

But in the end, these exercises do have a direct budget impact on us. Ron Fogleman and Mike Loh, and some our of other generals out there in the operating force are the guys who end up signing the tab.

GENERAL HATCH: Thank you, General McPeak. Under the subject of training, this question refers to the Air Force Academy. Last year saw new legislation pertaining to civilian professors, limits on the number of cadets, and a number of other issues. How does the future look for the academies in the three services?

GENERAL McPEAK: I think their future is secure. It's fundamentally a good idea to educate people. It's hard to argue otherwise, and these academies, ours and the others, are superb educational institutions.

We retain in the ballpark of half of our Academy graduates for a career. The other half go back to their communities and make wonderful substantial contributions. How can you argue that this is not a good thing to do? I think it's a terrific institution.

It has come under attack by some who believe that we are producing an elite force that is separated in some way from the rest of society. So we just have to keep working away on that problem and make sure everybody understands that we want to be in and of the United States. We're fully committed to that concept, and we don't want to grow apart. What makes us a strong institution is the fact that we reflect the best in American values. So we certainly don't want to grow apart from it.

But I must tell you that this kind of attack on the academies is going to play a role in how we analyze the future for the Air Force Academy, whether it should remain an independent institution reporting to me directly as a direct reporting unit, as it does now, or whether it should be subsumed in the larger education and training command under General Viccellio.

So that's one factor. It's not the only one. There are others. But it is a consideration that we'll try to work our way through this spring, when we put that issue on the table for discussion.

GENERAL HATCH: Thank you, Chief. The next question pertains to the Strategic Defense Initiative. That's a major budget program each year. What portion of the missions and programs will affect the United States Air Force in the future?

GENERAL McPEAK: Well, SDI is an

R&D program working working toward an initial deployment. But eventually, all those capabilities would have to be employed by the armed forces. So I see SDI as having the potential, certainly, to have a very big influence on the future Air Force, especially the space-based systems that will be operated by the Air Force.

Now, I do believe that that effort will be scaled back and slowed down somewhat by the new administration. But I'm hopeful that we will continue to press on with this program. I'm a big supporter of the idea that we ought to try to defend the United States. If this nation lasts 1,000 years — and we all pray that it will — we will certainly be attacked, during that period, by somebody with ballistic missiles.

So it makes absolutely no sense whatsoever for us to ignore that possibility, and to say that we don't have to work on defending the property, the values, and the people of this nation. So I'm strongly in favor of continuing to work on some kind of initiative for defense against ballistic missiles, and quite confident that, as we move in that direction, the Air Force will play a very substantial, indeed a major, role.

GENERAL HATCH: The next question, General McPeak, speaks to the F-15E. What are your thoughts on the requirement for additional aircraft?

GENERAL McPEAK: The requirement for additional aircraft is a good one. We do need additional aircraft, because this is exactly the kind of capability we have to have in the future. This is a day-night, all-weather, long-range, precision guidance munitions capability. I haven't worked the analysis, but I'll bet you that one F-15E is probably more effective than, say, the 1,000 B-17s that raided Schweinfurt. I won't claim that here, but at least we'd be hitting the building we were aiming at when we went with the F-15E.

That's exactly the kind of system we need to have for the future. As we grow smaller, the need for that capability is exaggerated. We have to find ways to be more productive with our air power, and that is a very high productivity system, in terms of output per man-hour.

So I would like very much to buy some more F-15Es. I'm not sure that the money will ever be there to do it. We have to operate inside the budget realities that we see. I'm delighted to see that the Saudi buy will at least keep the possibility open, because it will keep the production line open. So we can continuously review where we stand and if we are able to figure out how to afford to do it, we would certainly want to buy some more.

GENERAL HATCH: Thank you, Chief. The final question has to do with the banked pilot program. What's the current outlook for those awaiting re-qualification?

GENERAL McPEAK: We were hoping to get everybody out of the bank by about '97.

The first cut we took at this, we were still going to have a bank at the turn of the century. That's how steep our drawdown has been in the cockpits available to which to send people. We then took another very serious set of stern measures, including very sharply restricting, for instance, the number of Air Force Academy graduates who can go to undergraduate pilot training. In a typical year, we graduate 1,000 people from the Air Force Academy. About 600 of them are qualified and go to flying school. We're now scaling that back, and only 250 or so can go out of the 600. So less than half of the qualified Air Force Academy cadets can go to flying school.

We did that so we could cut down the number of flying school graduates to 500 a year in '94 and '95. We did that so we could bring people back out of the bank faster. And we now project that — or we did until quite recently — project that we could get out of the bank business by about '97 or '98.

We have recently been given the task of working on the '94 budget, with a view to taking about $3 billion out of it. I am going to have to go back and work the numbers again, because there will be some force structure losses during that calculation. We'll just have to look again and see how long we're stuck with this bank.

I don't feel good about it, I'll tell you. As it looks to me, I started the bank but I won't get it solved. I'll hand it off to the next chief. And guess what? I don't think he's going to get it solved either. So the chief after the next chief will still be calling me pretty dumb for leaving this problem around ticking on his plate. But you know, we're playing the hand that was dealt to us and trying to do the best we can.

Thanks very much. I appreciate being with you, and look forward to the ball this evening.

GENERAL HATCH: Chief, thanks for being with us today.

General Henry Viccellio, Jr.

"New Directions from the Year of Training"

Thanks for that introduction. Your new video calls the AFA "The Force Behind the Force" — and that you indeed are. The AFA is many things to many people, and one thing it is to me is a great facilitator. You carry our concerns to our nation's leadership while we're busy doing the business that leadership directs. You inform our members and others on critical airpower issues. One of the most visible forums AFA uses is the symposium, and I'm honored to be up here with some respected friends as part of this morning's program. Thanks again.

General McPeak just mentioned some of the new ideas, concepts, and directions resulting from our year of training review. These ideas have since provided the impetus for some major changes in the way we'll do business in ATC.

I'd like to take today's opportunity to discuss a few more details of the changes in both our philosophy and our structure which are now "taxiing out of the chocks."

Let me say a few words about the backdrop of these changes. Throughout this symposium, you've heard how the emerging world order is affecting our Air Force warfighting commands.

Let me assure you, if changing conditions affect the requirements of our warfighting partners, then they affect the way we approach our business in ATC.

They respond to immediate changes in the world . . . We build the programs which help them sustain that response.

Our colleagues in the Air Force Materiel Command produce the "things" — systems, spares, and equipment — which our warfighters need to fulfill their missions. In ATC, we produce the people who apply those assets to the tasks at hand.

As general George S. Patton put it, "Wars may be fought with weapons, but they're won by people."

Highly trained, highly motivated people remain the most valuable resource our Air Force has, and ATC's vision is to produce quality people — people with both the right skills and the right perspective and attitude — to meet our customers' military needs in dynamic times.

Long before our young Air Force men and women are first employed by a gaining command, long before they show up to work for the first time at their first operational base, Air Training Command will "reach out and touch" every one, grooming them for duties with the rest of the Air Force.

Well, just as others have been examining themselves in light of the dramatic changes taking place, so we in ATC have been examining our roles. Throughout — and ever since — the Year of Training, we have undertaken a series of careful reviews of our Air Force training and education, looking for ways to improve — and to add more quality, consistency and rigor to our programs.

We asked questions like:

- How do we conduct training and education?
- Who does it?
- What's the content?
- Do we do it smartly?
- Do we do it effectively and efficiently?
- Do we do training in a standardized way?

Well, putting our "pipper" on these and other questions in a "no-holds-barred"

evaluation revealed, among other things, that our training had become somewhat diffused, and had become — to a substantial degree — everyone's business.

Now, if you were a graduate student in management, you could probably make an argument that training should be everyone's business. . . . And from one point of view, that is true.

But training — and here I'm focusing on initial skills training — had become so much a part of everybody's business that there wasn't really a central focus on what we wanted our Air Force training to be and do — on what we wanted it to produce in the way of a trained individual.

Our focusing on the desired end product — a quality, trained individual who's ready for the mission when needed — is prompting — among literally hundreds of individual changes — five major directions in our approach to training:

First, We'll be reorganizing, revising, and refocusing on providing comprehensive initial skills training aimed at producing mission-ready people for our customers — people ready to go to work, from day one when they leave the training pipeline and arrive at their new base . . . I'll discuss this direction at length, because it's really a pillar supporting the other changes we're making.

Second, we're seeking to ensure standardization in our approach to training so that everyone — regardless of grade, career field, or specialty — enters the game with a common baseline of initial skills, and an appreciation of the Air Force mission and how what they will be doing contributes to it.

Third, we're revamping the continuation training program for our enlisted force — something that's been ad hoc at best in the past.

Next, we're working to ensure the Air Force's training and education programs — each strong today — can better complement each other in the future.

And finally, these all aim toward some fundamental changes in the mindset — in mindsets across the Air Force — of exactly what our command and our mission is all about.

Now let me describe these in a bit more detail:

Comprehensive Initial Skills Training

In today's program, which is the product of an evolutionary process, we found a system where initial skills training for Air Force people has become seemingly the job of everyone . . . Much is done in ATC, some in Air University, some in the operational commands, some in the functional commands, some through "functional fiefdoms" — the Air Force engineers, the Air Force medics, the Air Force communicators — everyone has a slice of the training pie. There were probably the best of reasons for this — such as training aircraft being available only in the gaining commands . . . such as training developed under growing fiscal pressure by one command — ATC — for the generic needs of all gaining commands, but not meeting the specific needs of any of them . . . such as a relative abundance of personnel resources — people — in times that weren't as austere as those we face today. Regardless of the reasons, each organization was properly focused on the product — well-trained people — but each came to consider itself ultimately responsible.

Now, I've got to be honest — there's one aspect of this approach that we can't ignore — today we have the best Air Force in the world made so to a great degree by our great people, so our training system "ain't broke" — not by a long shot . . . it's just that for a lot of intuitively obvious reasons, it was time for a review — and it's time for some improvements — as we look to preserve or even improve our training effectiveness, but to do so at reduced costs.

But let me offer another view which may reveal why today's approach to training may not be the best way to do business.

There are a lot of former commanders in this audience who can tell you firsthand why such a change might be necessary —

and I'm one of them.

I had the extreme good fortune of commanding two wings — one just down the road at MacDill and the other at Langley. As I look back, in both cases I can recall investing 25 to 30 percent of my time, effort, and resources — and that much of the time, effort, and resources of my people — training the people who came to me from ATC and other sources . . . But mostly from ATC.

A lot of them arrived a long way from being mission ready — whether we're talking aircrews, non-rated officers, or enlisted personnel. I had pilots who would need anywhere between 10 and 40 additional local sorties before I'd feel comfortable letting them fly as wingmen in even a benign combat role.

In the case of enlisted personnel, it was often worse — many of them, especially those in our most critical sortie-producing skills, arrived having never even set their eyeballs on the equipment they were going to operate — they'd never seen the airplane, the part of it for which they would be responsible, nor, in too many cases, the specific test equipment they were expected to use on the job.

From my vantage point at the operational end of the spectrum, the philosophy in those days — which is now beginning to change under the pressure of our new directions — seemed to be founded on providing basic philosophy, basic policies, and generic tech skills, and letting the operational commanders worry about the specifics — not to mention readiness.

Instead of getting people from the training pipeline who could say, "Show me my locker, I'm ready to go to work," we got people who'd look at their equipment and wonder what to do next.

And what's worse, while these people were busy trying to get up to speed, they were on my books — on our Air Force's books — as part of our nation's combat capability.

On the receiving end, I remember feeling that we needed something different.

I wasn't the only one to recognize this training gap. In an attempt to plug it, a robust system of field training detachments (FTDs) evolved — up to 97 locations at one point — as ATC worked with the MAJCOMs to complete needed training. Eventually, a trained, 3-level apprentice airman would be produced — but it was a long process, and one less than customer friendly . . . And another thing — this FTD system was supported — money and manpower-wise — predominantly at the gaining command's expense — again, a definite disconnect as we look at it in hindsight.

Well, as General McPeak — and what might be called the "world's largest process action team" — started in on our Year of Training, I thought to myself — as did a lot of other people — that this might be an excellent opportunity to improve on that process.

To make a long story short, in contrast to today's approach, tomorrow's template includes our goal to train our people so that when they get to their first operational assignment, they're familiar with their equipment, with what their job will be, and with the Air Force's — and their commander's — expectations . . . a program which will free the warfighters from as much of the burden of providing initial training as practical.

To help us all focus on what's needed, we're calling this concept, as it might apply to our enlisted force, a *"Lackland to Langley"* continuum. We envision bringing young enlistees through the main gate of Lackland, through basic training, through fundamentals training, and with a few conscious exceptions, through specific skills training on those systems they'll be using when they leave the training environment. When they walk through the main gate at Langley — or wherever their first assignment is — they'll be far more ready to go to work . . . from day one.

With Luke, Tyndall, and Altus Air Force bases joining our command in July, we'll be a quantum leap closer to providing a continuum for rated training as well. But gaining new airplanes is just one of several factors which will help make this continuum an improvement.

Another is SUPT — Specialized Undergraduate Pilot Training — which is in being today . . . In a nutshell, SUPT allows us to focus on major weapon system-specific skills earlier through a path which places pilot candidates on a bomber-fighter or tanker-transport track and in an aircraft designed for those specific skills following their primary training in the T-37. We're also developing a fresh approach to our instructor pilot management that will teach, refine, and reinforce skills, perspectives, and attitudes that students will rely on through the rest of their careers.

We might call this one *"Reese to Ramstein."* Better screening, an experienced IP force, aircraft designed for specific purposes, earlier focus on mission requirements, and better integration and feedback between the various phases of training — all these changes should produce a much different — and a much better — new pilot than we do today.

So our first major direction will focus on providing our customers with a single agency responsible for training their new people — one "belly button" to press to convey their needs, modify their requirements, and critique and help us review our progress. We're confident we can provide trained people who have all completed a continuum of training that's focused on mission-ready qualifications — albeit at the apprentice level — provided by full-time, professional instructors from the operational Air Force.

A Standardized Approach to Training

In today's program, our review showed we have somewhat of a "county option" approach to initial training. After graduating from Lackland or one of our officer programs, most new Air Force folks continue on in ATC, getting a reasonable exposure to their initial skill requirements. Others, however, get somewhat "short sheeted" with exposure to little more than fundamentals or basics. And believe it or not, we found far more specialties than we'd like to admit in which we simply "issue" the boot camp survivor to the Air Force, hoping at best that somewhere out there will be an NCO or officer who will instruct these individuals in what they are to do, what they need to know, and what the Air Force has to offer in the way of both expectations and opportunities.

This reminds me of an old quip about advice to beware of in the military — like when the airman basic comes up to you and says, "Sir, based on my experience . . ."; or when the second lieutenant comes up and says, "Sir, I've been doing a lot of thinking about it, and . . ." Well, humorous or not, we've been fostering this attitude about our youngsters because we haven't built a system which prepares them to enter their jobs. We need to move away from sending our people into the field only partially ready, and establish a process where every new Air Force accession receives adequate tech school training.

This standardization in our training pipeline offers us major dividends . . . Everyone enters the game with a common baseline as to how to do their job, and a common understanding of our mission, their role, and what's important to us as an institution — vision, values, doctrine, policy.

They'll not only learn what they'll do in the Air Force, but they'll learn the way their function contributes to the total effort and what is expected of them — whether they're a cop, medic, pilot, administrative clerk, or whatever . . . And what they will find at Langley, Kadena, or Ramstein when they arrive . . . We'll give everyone the same opportunity to unlock his or her talents. We'll be applying, as it were, one of John F. Kennedy's adages — "All of us do not have equal talent, but all of us should have an equal opportunity for our talents."

And quite frankly, it won't cost a lot of money to do this because our command already has in place the infrastructure needed to provide these courses and make certain that every officer and airman enters the game on a level playing field with a common vision as to both the purpose and the rules.

Revamping Continuation Training

Now that our people are out on the field and in the game, our third direction has to do with continuation training — that follow-on training needed to help an individual progress through grade structure and skill levels, and handle the increasing responsibilities that are commensurate with career progression.

In today's program, we have what's called the "TDY-to-school" program — training for people who come back to us. Normally, however, this is for no more than a short course prepared in response to some specific change — some specific need — that has occurred, either in their career field Air Force-wide, or on their specific piece of equipment.

Examples include everything from fire rescue training prompted by new chemical systems, to electronic measurement courses helping our meteorologists exploit new technologies, to advanced composites courses for our maintainers, to courses designed to simply help people across the Air Force use computers on the job.

Aside from these focused and somewhat ad hoc exceptions, our basic philosophy has been to train our people in initial tech school, then issue them out to our field units across the Air Force, entrusting their careers and their performance to an OJT [on-the-job training] program, the content and quality of which is usually determined on a local basis.

While this somewhat oversimplified description of what goes on through an individual's career belies the demonstrated quality of today's expert airmen and NCOs, the point is — we can do a better job.

In tomorrow's template, we've looked for the point out there in every NCO's career where it's appropriate and useful to bring him or her back to the formal training environment for a "technical update" on the job — and some preparation for responsibilities that lie just ahead.

This point in their career is well past their 3-level apprentice period, during which they're doing the job, but as yet under supervision. It's even beyond the initial 5-level skill point, when supervision is no longer such a part of their daily workplace scene. We feel the right point comes as the individual is preparing for 7-level responsibilities — becoming the prospective "chief fixer, the chief doer, the supervisor, the trainer, or instructor" . . . Where they are starting to move beyond the focus of just their own personal performance, and assume the critical task of molding and certifying others' performance . . . This is a key point in a person's career — a major shift in responsibilities . . . one that calls for new perspectives and one with which we want the "system" — that's us — to be of more help than in the past.

During this focused update, we want to show them the latest technical approaches to their job, because, quite frankly, as hard as our people out there are working in the day-to-day environment, there's a natural tendency to do the job tomorrow much like it was done yesterday.

So we'll start off by showing them new developments in their career field from a technical point of view, and from a procedural point of view. After bringing them up to date, we'll show them what's next, what's ahead, and then get them ready for those supervisory duties they're about to pick up.

We'll tell them about training and certifying others, about managing and motivating . . . Then — and this is critical — shortly after this point in their career, we'll also fold in a little PME [professional military education] — complementary education and training with the right focus for the right people at the right time in their career. Which leads me right into our fourth new direction . . .

Complementary Education and Training Programs

In our review, we found that training, which, as I've mentioned, was and is being done by a lot of different organizations and entities, had become really a thing apart from education — with the latter being done primarily by Air University. Both

functions are executing great programs, but they are clearly working toward somewhat separate goals — not distinct, and not, in terms of the kind of product we wanted, different, but separate goals.

In other words, we have a PME structure and an education structure managed *over here,* and we had a training structure — classroom activities, hands-on opportunities, a series of skill levels, tests, and such managed over here.

It doesn't take a Ph.D. in psychology or a rocket scientist to know the two need to mesh together, because when you look at our personnel resources, both are needed. As the chief pointed out earlier, education teaches people how to think, and training teaches them how to do.

While some of this may seem like metaphysics, it's clear to us that training and education need to complement each other, and looking at them — managing them — doing them — as two parts of a whole will help us turn out people more prepared for the challenges faced at every point in their careers.

In our review of today's programs, we discovered that in some respects, we were disconnected — sort of "passing in the night." For example, we found people who are interested in education — and in an Air Force environment that focuses on and promotes education, they had become really educated. In other words, relatively early in their careers they pursued every available opportunity and attained an impressive display of diplomas. At the same time, however, progress in the on-the-job arena had not been quite as rapid — few stripes — and limited experience. For these troops, education — great in itself — had come at an inappropriate time in these particular careers . . . So there is a disconnect there.

In contrast, we also found people that had rapidly attained high skill levels and stripes — you've all met the troop who seems to be able to fix just about anything or get any job done, no matter how tough — but for one reason or another — lack of time, lack of opportunity, lack of interest — education hadn't played much of a role. They had missed out on available opportunities. They were headed for the pinnacle of personal performance, but doomed to fall short of their personal potential.

This equates to these illustrative individuals only being "half-ready" for the roles they needed to play, again, particularly at that point where they need to, and we need them to apply a blend of supervisory and leadership skills — and technical "know how" — to bring others along in their skill progression.

Well, what this all boils down to is the crux of last month's announcement which brings Air University and ATC together effective this July. We're convinced we'll be able to better promote an education and training synergy by melding together our purpose, our programs, and our resources as the Air Force's Air Education and Training Command.

For tomorrow's template, we're now in the process of building a training and education roadmap for every career field in the Air Force. These roadmaps will define our institutional vision of what the key steps are along their career path — tying task knowledge, proficiency level, skill ratings, grade, education, qualification milestones, and other career path markers together better than we've done it before . . . Thus, these roadmaps will define what our people need and when they need it — in both education and training.

Changes in Mindsets

One outgrowth of these four emerging directions is a final thrust aimed at changing the traditional perceptions — and perhaps some realities — about ATC.

Let's face it . . . Although we've come a long way in recent years, the perception of ATC across our Air Force hasn't necessarily been flying at the same altitude as its responsibilities.

For a lot of reasons — most of them our own doing — our people, our organization, and our activities have been viewed as somewhat apart from the rest of the Air Force, and by the rest of the Air Force.

Rather than being seen as "those train-

ing commandos down in Texas — who seem all too concerned with their own thing," we need to become — and be viewed as — a vital part of the Air Force team that's focused on and which contributes to our quality and our operational capabilities:

- Our activities a part of the Air Force mainstream;
- Our product a key element in every warfighter's matrix;
- Our instructor force manned by enlisted and officers — the "best and the brightest" from across an Air Force population that views an instructor tour as an important element of a successful and productive career.

So there are our five emerging directions:

First, comprehensive initial skills training that provides mission-ready people to our customers;

Second, standardization in our training pipeline;

Third, a revamped continuation training program for our enlisted force that focuses on technical excellence and quality supervision;

Fourth, synergistic education and training programs;

And finally, an evolution in the mindset of exactly what our command is all about.

New Action Items

Before I close, let me share with you a smattering of individual action items — over and above those I've already touched on — which we are planning and implementing as part of the Year of Training.

As I mentioned, we're building the courses to provide 3-level training for every enlisted person, from the new course we're building to train warehouse stockers, to the existing biomedical specialist course which lasts seven months.

We're identifying items which will produce savings — in training days and instructor authorizations, such as:

- Deleting courses no longer required;
- Expanding class sizes;
- Increasing student to instructor ratios;
- And changing how courses are taught — through field training detachments, mobile training teams, or through interservice courses, a growth industry which may become a bigger part of our future.

We're developing career field education and training plans for all 238 technical specialties in the Air Force to chart a path for them throughout their career.

We're moving away from the practice of first assignment instructor pilots in our training force, with the end goal to have only experienced pilots from our Air Force's major weapons systems to provide our pilot training.

Were downloading the "head shed," moving "action" responsibilities traditionally held at Randolph into two new Numbered Air Forces, and wings and even squadrons — pulling together the determination of what we do and how we do it with those who have to make it happen.

The bottom line of our efforts is this: the closer we can come to providing mission ready Air Force members, the better we'll be at doing what we "ought" to be doing. If there's one statement we'd like our customers to make about our graduates, it's that "there's no second thoughts": "no second thoughts" whatsoever about the quality of the people we train, their perspectives and attitudes, or of their readiness to hit the ramp running when they arrive on the operational scene.

We feel that these changes, while sweeping in philosophy, are sensible in approach. It may not quite be training's equivalent of moving from props to jets, but it may be pretty close! By bringing rigor and a formal structure to technical training for every new officer and airman, we'll provide a much firmer foundation from which the world's best Air Force of today — and of tomorrow — can truly "aim high."

Our Air Force is the best in the world today — and thanks in no small part to AFA's tremendous support — your key role in our successes — past and future — make it a real honor to address this Association, and to offer my thoughts on our steps to-

ward improving some of the key building blocks of our quality Air Force.

I'll now be happy to take your questions.

Question & Answer Session

General Henry Viccellio, Jr.

GENERAL HATCH: Thank you, General Viccellio. We appreciate your being here. You're off to a great start in your new command.

The first question has to do with the roles and missions review. Is it possible that the Air Force will become responsible for all basic fixed wing flying training for the services?

GENERAL VICCELLIO: Well, as many of you know, in my previous job I had a key role in roles and missions. As we looked at the various functions that the armed services performed, we went beyond the operational side and looked at the support areas. We found various areas where, over the years, each of the services had developed an individual way or an individual structure to do a mission, which in reality, sometimes to a great degree, was very much like what the other services were doing. Training was one of those.

So the Chiefs and the Chairman decided to start an exhaustive look at both flying training and initial skills training for enlisted personnel and non-rated officers. I would venture to say that, when this review and study is complete, we will probably come to some agreement about doing some joint pilot training.

No decisions have been made yet, but my guess would be that we'll probably focus on those parts of our curricula that are most similar. In primary flying training that similarity will be enhanced by the fact that the Air Force, Navy and Marines are moving to a single aircraft, the JPATS [Joint Primary Air Training System], in years to come. This might also include helicopter training, and perhaps multi-engine training, where carrier qualification is not a factor, such as for Navy P-3 pilots or C-9 pilots.

When this will occur, how fast we will move in that direction, and the structure that will eventually support it has not yet been determined. That will be one of the tougher issues. But there's no doubt that we have an infrastructure across all the services that is larger than what we need in future years.

Needless to say, what our role in that will be is not certain. I know we'll be part of it, but will we dominate it, or will we be exclusive trainers? Quite frankly, I doubt that. To some degree we have created a little bit of an imbalance as we begin this analysis, because we've already stepped up to closing two flying training bases at Mather and Williams [Air Training Command bases in California and Arizona]. That put us on a pretty high capacity basis in the remainder, whereas the other services are starting one step prior to that.

So there are a lot of complicating factors, but it would not surprise me if we're doing some joint training in the relatively near future.

GENERAL HATCH: Some very good points there. Thank you. A few questions on JPATS. The first one notes that the RFP states that the successful candidate will be a proven trainer. Can you help us with the definition of a "proven trainer"?

GENERAL VICCELLIO: Let me preface any answer to any question about JPATS by saying that — well, I guess I was about to use the old cliche that the jury is still out on a lot of issues. But I guess it would be more accurate to say that we're changing jury members with the change in administration. The new admin-

istration has made it clear at the secretarial level that they're interested in looking at the joint plan for this aircraft that Mr. Yockey reviewed in a DAB in January.

I don't know whether they're going to want to change anything, but the current acquisition strategy, the current profile, the current schedule of major milestones to come is going to be reviewed by the administration. Whether or not that slows us down at all, whether or not that changes anything at all, it's too early to tell. But I do want to caveat anything I say in that regard.

What's a proven trainer? One of the advantages, from our point of view, in moving forward toward a JPATS selection is the fact that we have an awful lot of potential candidates out there flying today. In almost every case there will be some missionization required of those aircraft, since they are already operating either in foreign countries, around the world, or here in the States. But generally speaking, we will be starting from a position of experience that's unlike starting from scratch, such as with a new aircraft like an F-22. Because of that we can pursue some acquisition strategy decisions, such as downsizing to a single competitor before we get into missionization, which will help keep us on track and probably save us money without increasing risk.

But again, whether or not things change from the viewpoint of a new administration so that opportunities are opened to aircraft not yet flying, it's just premature to say. And I know that's what's behind the question.

GENERAL HATCH: In that same area, we have the perennial question of turboprop versus jet aircraft, General Viccellio.

GENERAL VICCELLIO: Well, three AFA members and two members of the media asked me that between the door and the podium here, so that is a hot one.

No one that I've talked to has any bias, prejudice, or preference, for turboprop or jet airplanes for the primary flying training mission. I certainly don't, either. As I told earlier questioners, we're going to have an RFP that gives performance specifications. Those performance specifications are derived from our view of how to do a very basic flying mission. That's primary, initial flight skills: how to make an airplane take off, land, and maneuver. As far as I'm concerned, we're going to take a look at the ability of turboprop and turbojet aircraft to meet those specifications, to give us us a capable aircraft at a certain cost profile.

We'll be looking at durability and reliability as well. Durability will be important to us. We're flying our aircraft today much longer, twice as long as we expected when we acquired them. And we may have to face that in the decades ahead as well.

So I guess the one-liner I would offer is, "No bias on my part."

GENERAL HATCH: Thank you, General Viccellio. The next subject is combat crew training. The question is, how will hardware and software updates be funded to ensure that those CCT [combat crew training] aircraft match the ACC counterpart configurations?

GENERAL VICCELLIO: Well, they will be funded as they are today. As we look at it now, we will probably start off by maintaining the funds for our training aircraft in the same pot of money as the funds for our operational aircraft. That will allow us to pursue upgrades, modifications, and improvements, and field them in our training base, as well as in the operational Air Force. There were a lot of feelings as we considered this question about doing that different ways, such as maybe funding our training CCTS airplanes from the ATC pool, the training pool. But I think we'll start out with training and operational aircraft funded out of the same pot. We view it as probably the most flexible and having the best chance for success.

I think even more important than funding is the commitment on our part. As I mentioned, whether you're talking about what an enlisted person works on at Shepherd Air Force Base, or what a pilot is flying at Luke Air Force Base, we are committed to training them on the type of equipment they're going to be working on

when they walk through that operational gate. The Air Force leadership is committed to update that philosophy from years gone by when budget crunches or different perspectives forced us into doing other things. I think it's the most important part of what we want to change.

GENERAL HATCH: Thank you, Butch. Let me combine a few questions. They all have to do with simulators, DARPA's synthetic environments, and the technology for the future. How do simulators fit in your future training plans?

GENERAL VICCELLIO: So far, we have looked at our simulator program from an undergraduate pilot training point of view. We have simulators today that do our mission very well. A simulator for the T-37 supports the varied generic skills that go with that phase of flying. The T-38 simulator, albeit it has a somewhat limited visual display and limited motion, seems to support what we do with the T-38.

I only had one opportunity to fly the T-1 aircraft and simulator, but it is my impression — and I am told by those with lots of airlift experience and tanker experience — that that simulator is just what we need to get the most out of our determination to provide airlifters with operationally oriented flying experience from the first day they start in advanced training.

We're going to move the T-38 syllabus more toward operational need through more formation flying, more low-level flying, more fluid maneuvering, those kinds of things. When we do that and tie the AT-38 on the end of it at the UPT [undergraduate pilot training] base, we may want to revisit the exact capabilities we need in the T-38 simulators. We're still going to fly that aircraft for a number of years, and as we change our focus in advanced training on the bomber/fighter track, we very well might want to improve that.

We're going to have a series of leadership meetings on simulators later this year. We're going to be looking at our requirements, not only in the training business, but in the operational business. Again, we would like to mirror, as much as possible, the application of simulators in the undergraduate combat crew training phases of a person's career right along with what they're going to experience when they go out to an operational base. That way the continuum is there as much as possible, and the need to relearn things, either in the box or the cockpit, is minimized when they arrive in the operational Air Force.

So I think we'll see some changes in our requirements for the T-38. Right now we're in good shape, as I see it, in the T-1, and in the primary training side.

GENERAL HATCH: Thank you. The final question has to do with the division of UPT slots for Academy and ROTC graduates. Could you address that, please?

GENERAL VICCELLIO: I get asked that a lot because there are a lot of opinions about it, as well as whether or not the answer we came up with is the right one.

I guess I feel that rule number one ought to be, if we're forced down to a lower number of pilot slots than has been the case, and that forces us to take some rather drastic actions, as it has, then we ought to keep some small window open for all candidates. That will keep them energized and eager to apply for pilot training.

We may have almost gone too far in closing this window. We don't even have one UPT slot for each of our ROTC detachments. We have 100 for the whole force, and we have 138 detachments. That bothers me. I believe it's down to 10 or less for OTS [Officer Training School], and that is a quality group of individuals. They have specific backgrounds, but their average GPA these days is running about 3.4, 3.5. And to just offer them a handful is really a tough decision.

Of course, on the other side of that, opening more slots to ROTC and OTS affects the Air Force Academy. But for those who feel like we ought to preserve opportunities for the qualified Air Force Academy candidates at all costs, I believe that is a little bit extreme. We ought to keep those windows open, as small as they may be, in our other two pre-commissioning sources.

So the bottom line, I think, is our current plan is just about right, but we're squeezing

everybody very, very tight.

GENERAL HATCH: General Viccellio, thanks very much for being with us today. You've given us a very comprehensive look at Air Training Command. We look forward to your future success. Thank you.

GENERAL VICCELLIO: Thank you very much.

Aerospace Education Foundation
1501 Lee Highway
Arlington, Virginia 22209-1198

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